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ABSTRACT

During the National Adult Literacy Survey (NALS), trained staff interviewed nearly 1,150 inmates in 80 federal and state prisons that had been randomly selected to represent prisons across the country. Survey participants completed diverse literacy tasks and answered questions regarding demographic characteristics, educational background, and reading practices. The interview findings were synthesized into a report focusing on inmates' literacy skills, experiences before and during improvement, recidivism, and literacy practices and self-perception. Among the study's major findings were the following: approximately 7 in 10 prisoners surveyed performed at levels 1 and 2 of the prose, document, and quantitative scales of the NALS; prisoners' reading proficiencies were substantially lower than those of the general household population; prisoners' educational attainment was highly correlated with literacy proficiency; White inmates demonstrated higher levels of proficiency than Black inmates, who, in turn, demonstrated higher levels of proficiency than Hispanic inmates; and 36% of prisoners reported having at least one disability compared with 26% of the general household population. (Appended are the following: information on interpreting the literacy scales, tables, overview of procedures used in the NALS, definitions of all subpopulations and variables reported, and names/addresses of participants in the development process. Fifty-six tables/figures are included.) (MN)

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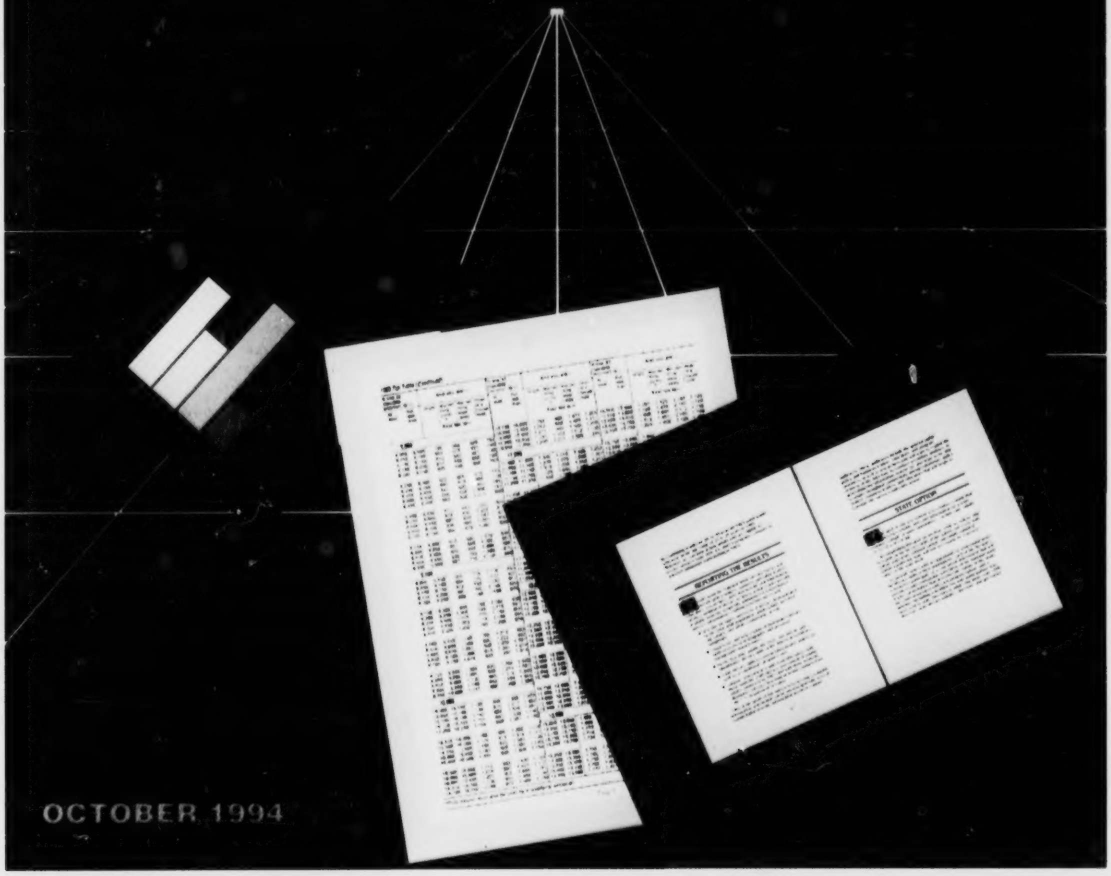
Literacy Behind Prison Walls

Profiles of the Prison Population from the National Adult Literacy Survey

Karl O. Haigler, Caroline Harlow, Patricia O'Connor, and Anne Campbell

Educational Testing Service



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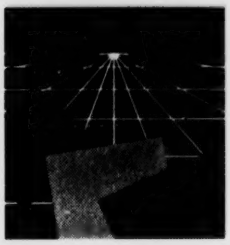

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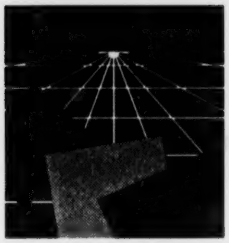

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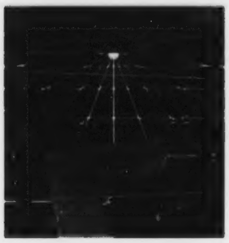

PREFACE

The United States has always been a mosaic of cultures, but the diversity of our population has increased by striking proportions in recent years. As Barbara Everitt Bryant, former director of the Bureau of the Census, has written: "If you gave America a face in 1990, it would have shown the first sign of wrinkles [and] it would have been full of color."[1] The median age of Americans continues to rise, growing from 30 to almost 33 years during the 1980s. It is projected that by the year 2080, nearly 25 percent of the adults in this nation will be over 65, compared with only about 12 percent today. The racial and ethnic composition of the nation also continues to change. While 3.7 million people of Asian or Pacific Islander origin were living in this country in 1980, there were 7.2 million a decade later — an increase of almost 100 percent. The number of individuals of Hispanic origin also rose dramatically over this time period, from roughly 6 to 9 percent of the population, or to more than 22 million people. Our increasing diversity can not only be seen but also be heard: today, some 32 million individuals in the United States speak a language other than English, and these languages range from Spanish and Chinese to Yupik and Mon-Khmer.[2]

Given these patterns and changes, this is an opportune time to explore the literacy skills of adults in this nation. In 1988, the U.S. Congress called on the Department of Education to support a national literacy survey of America's adults. While recent studies funded by the federal government explored the literacy of young adults and job seekers, the National Adult Literacy Survey is the first to provide accurate and detailed information on the skills of the adult population as a whole — information that, to this point, has been unavailable.

Perhaps never before have so many people from so many different sectors of society been concerned about adult literacy. Numerous reports published in the last decade — including *A Nation at Risk*, *The Bottom Line*, *The Subtle Danger*, *Literacy: Profiles of America's Young Adults*, *Jump Start: The Federal Role in Adult Education*, *Workforce 2000*, *America's Choice: High Skills or Low Wages*, and *Beyond the School Doors* — have provided evidence that a large portion of our population lacks adequate literacy skills and have intensified the debate over how this problem should be addressed.

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[1] B.E. Bryant. (1991). "The Changing Face of the United States." *The World Almanac and Book of Facts, 1991*. New York, NY: Pharos Books. p. 72

[2] United States Department of Commerce. (April 1993). "Number of Non-English Language Speaking Americans Up Sharply in 1980s, Census Bureau Says." *United States Department of Commerce News*.

Concerns about literacy are not new. In fact, throughout our nation's history there have been periods when the literacy skills of the population were judged inadequate. Yet, the nature of these concerns has changed radically over time. In the past, the lack of ability to read and use printed materials was seen primarily as an individual problem, with implications for a person's job opportunities, educational goals, sense of fulfillment, and participation in society. Now, however, it is increasingly viewed as a national problem, with implications that reach far beyond the individual. Concerns about the human costs of limited literacy have, in a sense, been overshadowed by concerns about the economic and social costs.

Although Americans today are, on the whole, better educated and more literate than any who preceded them, many employers say they are unable to find enough workers with the reading, writing, mathematical, and other competencies required in the workplace. Changing economic, demographic, and labor-market forces may exacerbate the problem in the future. As a recent study by the American Society for Training and Development concluded, "These forces are creating a human capital deficit that threatens U.S. competitiveness and acts as a barrier to individual opportunities for all Americans."[3]

Whether future jobs will have greater literacy requirements than today's jobs, or whether the gap between the nation's literacy resources and its needs will widen, are open questions. The evidence to support such predictions is scarce. What many believe, however, is that our current systems of education and training are inadequate to ensure individual opportunities, improve economic productivity, or strengthen our nation's competitiveness in the global marketplace.

There is widespread agreement that we as a nation must respond to the literacy challenge, not only to preserve our economic vitality but also to ensure that every individual has a full range of opportunities for personal fulfillment and participation in society. At the historic education summit in Charlottesville, Virginia, the nation's governors — including then-Governor Clinton — met with then-President Bush to establish a set of national education goals that would guide this country into the twenty-first century. As adopted in 1990 by members of the National Governors' Association, one of the six goals states:

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[3] A.P. Carnevale, L.J. Gainer, A.S. Meltzer, and S.L. Holland. (October 1988). "Workplace Basics: The Skills Employers Want." *Training and Development Journal*. pp. 20-30.

By the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.

The following year, Congress passed the National Literacy Act of 1991, the purpose of which is "to enhance the literacy and basic skills of adults, to ensure that all adults in the United States acquire the basic skills necessary to function effectively and achieve the greatest possible opportunity in their work and in their lives, and to strengthen and coordinate adult literacy programs."

But how should these ambitious goals be pursued? In the past, whenever the population's skills were called into question, critics generally focused on the educational system and insisted that school reforms were necessary if the nation were to escape serious social and economic consequences. Today, however, many of those who need to improve their literacy skills have already left school. In fact, it is estimated that almost 80 percent of the work force for the year 2000 is already employed. Moreover, many of those who demonstrate limited literacy skills do not perceive that they have a problem. Clearly, then, the schools alone cannot strengthen the abilities of present and future employees and of the population as a whole. A broad-based response seems necessary.

To initiate such a response, we need more than localized reports or anecdotal information from employers, public leaders, or the press; accurate and detailed information about our current status is essential. As reading researchers John Carroll and Jean Chall observed in their book *Toward a Literate Society*, "any national program for improving literacy skills would have to be based on the best possible information as to where the deficits are and how serious they are."[4] Surprisingly, though, we have lacked accurate and detailed information about literacy in our nation — including how many individuals have limited skills, who they are, and the severity of their problems.

In 1988, Congress asked the U.S. Department of Education to address this need for information on the nature and extent of adult literacy. In response, the Department's National Center for Education Statistics and Division of Adult Education and Literacy called for a national household survey of the literacy skills of adults in the United States. A contract was awarded to Educational Testing Service and a subcontract to Westat, Inc. to design and conduct the National Adult Literacy Survey, results from which are presented in these pages.

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[4] J.B. Carroll and J.S. Chall, eds. (1975). *Toward a Literate Society: A Report from the National Academy of Education*. New York, NY: McGraw Hill. p. 11.

During the first eight months of 1992, trained staff conducted household interviews with nearly 13,600 individuals aged 16 and older who had been randomly selected to represent the adult population in this country. In addition, some 1,100 inmates from 80 federal and state prisons were interviewed to gather information on the skills of the prison population. Finally, approximately 1,000 adults were surveyed in each of 12 states that chose to participate in a special study designed to produce state-level results that are comparable to the national data. Each individual was asked to spend about an hour responding to a series of diverse literacy tasks and providing information on his or her background, education, labor market experiences, and reading practices.

The results of the National Adult Literacy Survey comprise an enormous set of data that includes more than a million responses to the literacy tasks and background questions. More important than the size of the database, however, is the fact that it provides information that was previously unavailable — information that is essential to understanding this nation's literacy resources.

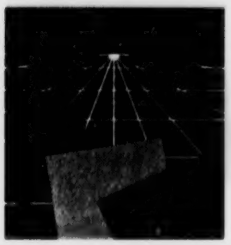
To ensure that the survey results will reach a wide audience, the committees that guided the project recommended that the findings be issued in a series of reports. This volume discusses the results for the prison population. The series also includes a report that provides an overview of the results of the survey as well as additional reports that offer a more detailed look at particular issues, including:

- literacy in the work force
- literacy and education
- literacy among older adults
- literacy and cultural diversity
- literacy practices

A final report conveys technical information about the survey design and the methods used to implement it.

Although these reports focus almost exclusively on the results of the National Adult Literacy Survey, their contents have much broader implications. The rich collection of information they contain can be used to inform policy debates, set program objectives, and reflect on our society's literacy resources and needs.

Irwin S. Kirsch
Project Director



EXECUTIVE SUMMARY

This is one in a series of reports that look at the results of the National Adult Literacy Survey, a project funded by the U.S. Department of Education and administered by Educational Testing Service, in collaboration with Westat, Inc. This report, in particular, provides an in-depth look at the literacy skills of prisoners incarcerated in state and federal prisons.

Many past studies of adult literacy have tried to count the number of "illiterates" in this nation, thereby treating literacy as a condition that individuals either do or do not have. We believe that such efforts are inherently arbitrary and misleading. They are also damaging in that they fail to acknowledge both the complexity of the literacy problem and the range of solutions needed to address it.

The National Adult Literacy Survey is based on a different concept of literacy and, therefore, takes a different approach to measuring it. The aim of this survey is to profile the English literacy of adults in the United States, including prison inmates, based on their performance across a wide array of tasks that reflect the types of materials and demands they encounter in their daily lives.

To gather the information on the literacy skills of inmates, trained staff interviewed nearly 1,150 inmates in 80 federal and state prisons. The prisons were randomly selected to represent prisons across the country, and the inmates themselves were randomly selected from the each of the prisons. In addition, as the main part of the data collection, about 13,600 adults aged 16 and older residing in households were interviewed across the country. These adults were also randomly selected to represent the adult population of the nation as a whole. Finally, about an additional 1,000 adults were surveyed in each of 11 states that chose to participate in a special study designed to provide state-level results that are comparable to the national data. In total, 26,000 adults participated in the survey.

Each survey participant spent approximately one hour responding to a set of diverse literacy tasks as well as to questions about his or her demographic characteristics, educational background, reading practices, and other areas related to literacy. As a result of their responses to the literacy tasks, adults received proficiency scores on three scales that reflect varying degrees of skill in prose, document, and quantitative literacy. The scales make it possible to profile adults in various subpopulations of interest and to describe their demonstrated levels of performance.

This report describes the types and levels of literacy skills demonstrated by prison inmates in this country and compares them with the skills of the household population of adults. It also explores the relationship between literacy skills and the background characteristics and prison experiences of inmates as well as their literacy practices and self-perceptions. Some of the major findings are highlighted here.

The Literacy Skills of Inmates

- About 7 in 10 prisoners perform in Levels 1 and 2 on the prose, document, and quantitative scales. These prisoners are apt to experience difficulty in performing tasks that require them to integrate or synthesize information from complex or lengthy texts or to perform quantitative tasks that involve two or more sequential operations and that require the individual to set up the problem.

- The average proficiencies of the prison population are 246 on the prose scale, 240 on the document scale, and 236 on the quantitative scale. Their proficiencies are substantially lower than those of the household population, whose proficiencies average 273 on the prose scale, 267 on the document scale, and 271 on the quantitative scale.

- The racial/ethnic composition and educational attainment of the prison population differ from those of the household population. About 65 percent of prisoners are minorities versus 24 percent of the household population. About 51 percent of prisoners have completed at least high school or its equivalent, compared with 76 percent of the household population. These differences in demographic composition help to explain the lower average performance of inmates as compared with householders.

- Educational attainment is highly related to literacy proficiency. Prisoners who have not received a high school diploma or GED demonstrate lower levels of proficiency than those who have completed high school, earned a GED, or received some postsecondary education.

- Inmates who received a GED demonstrate about the same proficiencies as householders with a GED. In contrast, inmates with a high school diploma demonstrate lower proficiencies than householders with a high school diploma.

- On all three literacy scales, White inmates demonstrate higher average proficiencies than Black inmates, who, in turn, demonstrate higher proficiencies than Hispanic inmates. The average proficiencies of White prisoners are lower than those of White householders. Black and Hispanic prisoners, however, generally demonstrate about the same proficiencies as their counterparts in the household population.

- When the prison and household populations are compared by educational attainment and race/ethnicity, prisoners generally perform as well as or better than their counterparts in the household population. White, Black, and Hispanic inmates without a high school diploma perform better than their counterparts in the household population. White and Black prisoners with a high school diploma or GED demonstrate about the same skills as their counterparts among householders with the same education. Black inmates with at least some postsecondary education perform about the same as their household counterparts, while White inmates with at least some postsecondary education demonstrate lower proficiencies on the prose and quantitative scales and comparable proficiency on the document scale.

- Male and female prisoners do not perform differently from each other on the literacy scales. Both male and female prisoners demonstrate lower proficiencies on all three scales than their household counterparts.

- Thirty-six percent of prisoners reported having at least one disability, compared with 26 percent of the household population. Significantly more inmates than householders reported having a learning disability or a mental or emotional condition. The proficiencies of inmates with a learning disability are significantly lower than those of inmates reporting most other disabilities and are also lower than those of householders reporting a learning disability.

- When the variables of sex, race/ethnicity, age, and level of education are held constant, the performance of the prison population on the three scales is comparable to that of the household population. Thus, differences in overall performance between the prison and household populations may be attributed to differences in demographic composition and educational attainment.

Experiences Prior to Prison

- Prisoners, in general, attain lower levels of education than their parents. For example, 49 percent of prisoners reported not having a high school diploma or GED, compared with 36 percent of their parents. Furthermore, overall, 39 percent of prisoners attained lower levels of education than their parents, compared with 21 percent of householders who attained less education than their parents.

- Generally, the higher the level of parental education, the higher the prisoners' proficiencies. When compared with the household population by level of parental education, however, the prison population demonstrates lower proficiencies than the household population. This may be attributable, in part, to the tendency for the inmate population to have lower levels of education than both their parents and the household population.

- Inmates who come from homes where only a non-English language was spoken demonstrate significantly lower proficiencies than those who come from homes where English was spoken. The proficiencies of these inmates from a non-English language background range from 165 to 180 on the three scales and indicate that they demonstrate skills associated with only the most basic literacy tasks.

Prison Experiences

- Over 60 percent of the inmate population reported being involved in education and/or vocational programs in prison. Generally those participating only in vocational programs demonstrate higher proficiencies than those not involved in any programs and those involved in only education classes or in both education and vocational classes.

- Almost 70 percent of inmates reported working in prison, and another 53 percent reported joining at least one group. Prisoners who either work or are involved in groups in prison demonstrate higher proficiencies than those who do not work or join groups.

Recidivism

- The literacy proficiencies of repeat offenders do not differ from those of first-time offenders. In addition, the proficiencies with respect to recidivism do not differ when comparisons are made by levels of education, race/ethnicity, or by the presence or absence of disabilities.

Literacy Practices and Self-Perception

- The literacy practices that more inmates than householders reported doing frequently — that is, every day or a few times a week — include reading and writing letters or memos and reading and writing reports or articles. Inmates who reported reading any material frequently demonstrate higher proficiencies than inmates who reported reading less than once a week.
- More inmates than householders reported reading a book within the last six months — 89 percent compared with 83 percent. The types of books most frequently read by inmates are fiction, reference, and inspirational and religious, while the books most frequently read by householders are manuals, reference, and fiction.
- Inmates do not appear to have as high an opinion of their reading, writing, and arithmetic skills as do householders. Slightly over half the inmates reported that they read or write English very well compared with 71 and 64 percent of householders who said they read or write English very well. Forty percent of inmates, compared with 53 percent of householders, said they can do arithmetic very well. The proficiencies of inmates who said they read, write, or do arithmetic very well or well are lower than those of their counterparts in the household population. There are no appreciable differences in the proficiencies of inmates and householders who said they do not read or write well, but proficiencies of inmates who said they do not do arithmetic well are lower than those of their household counterparts.
- In spite of their overall lower proficiencies, more inmates than householders reported getting no help with such activities as filling out forms, reading newspapers or other written information, reading information from agencies and companies, and writing letters. This may be due more to the prison environment not being conducive to seeking help rather than to the inmates not perceiving that they need help. The proficiencies of inmates who get a lot of help with these activities are lower than those of inmates who get less help. Furthermore, inmates who get a lot of help with these activities, with the exception of writing letters, demonstrate lower proficiencies than do their household counterparts.

Reflections

In this section, we reflect on the literacy skills of the prison population and discuss implications for those who administer, work, or volunteer in programs that directly affect prisoner learning. These include not only prison administrators, educational and vocational staff, literacy volunteers, and social group organizers, but also prisoners who help their fellow inmates to advance their literacy skills.

- Inmates having a high school diploma should not be viewed as necessarily possessing the literacy skills needed to function in society, given that their performance is lower than that of householders with a high school diploma. Inmates who have a high school diploma, as well as inmates with no diploma, need opportunities to improve their literacy skills.

- One important aspect of being literate in our society is possessing the knowledge and skills to process information found in documents.[1] Reading and using documents are not only important in our personal lives, but are also a necessary part of managing a household and performing on the job. Research has shown that adults spend more time reading documents than any other type of material.[2] Yet from 69 to 81 percent of inmates reported that they read documents such as directions, instructions, diagrams, bills, and invoices less than once a week. In addition, more inmates reported getting help with documents such as forms and printed information from agencies, companies, and businesses than with other kinds of materials. Given the importance of documents in our society and inmates' relative lack of exposure to them, it would seem that incorporating documents into prison education and vocational programs, job assignments, and group activities is important if inmates are to possess the skills needed to succeed once they are released from prison.

- Even though about the same percentage of inmates as householders reported getting help doing arithmetic, a greater percentage of inmates than householders reported that they are not able to do arithmetic well. This, coupled with the comparatively low performance of inmates on the quantitative scale, would indicate that the quantitative skills of inmates need improvement. That inmates do not get a lot of help with arithmetic may be attributed to the lack of opportunity to use arithmetic in prison life. One response could be to integrate the use of arithmetic and mathematics into a variety of prison experiences.

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[1] I.S. Kirsch and P.B. Mosenthal. (1990). "Exploring Document Literacy: Variables underlying the performance of young adults. *Reading Research Quarterly*, 25, pp. 5-30.

[2] J.T. Guthrie, M. Seifert, and I.S. Kirsch. (1986). "Effects of Education, Occupation, and Setting on Reading Practices." *American Educational Research Journal*, 23, pp. 151-60.

- As reported in *Adult Literacy in America: A First Look at the Results of the National Adult Literacy Survey*,[3] individuals demonstrating lower levels of literacy were more likely to be out of the labor force. According to this report, from 34 to 53 percent of adults in Levels 1 and 2 were out of the work force at the time of the survey. Given that over two-thirds of the inmates demonstrate performance in Levels 1 and 2, their prospects for being employed upon release from prison are diminished, unless their skills can be improved considerably. This same report also revealed that adults who perform in the highest levels are much more likely to report holding managerial, professional, or technical jobs than are respondents who perform in the lowest levels. Adults in the two lowest levels were more likely to be employed in craft, service, labor, assembly, farming, or fishing occupations. It is, therefore, not surprising that few inmates reported holding professional jobs prior to incarceration.
- Eleven percent of prisoners reported having learning disabilities, compared with only 3 percent of the general population. These inmates scored at the very low end of the three literacy scales and their demonstrated proficiencies indicate that they are able to perform only the most basic literacy tasks. The fact that learning disabled people are disproportionately represented in the prison population underscores the need for accommodating learning disabilities and developing methods tailored for the learning disabled in prison learning situations.

The national goal that all of America's adults be literate by the year 2000 includes those adults incarcerated in prison. Given the results reported, literacy programs for inmates cannot afford to be short changed. Prisons should not be expected, however, to shoulder all the responsibility; individuals, groups, organizations, schools, colleges, and businesses need to reach behind prison walls with efforts aimed at improving the literacy skills of inmates. It will take a comprehensive strategy, the purpose of which should be to prepare the whole person for succeeding in the world beyond prison walls.

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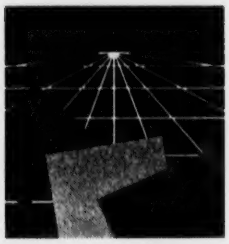
[3] I.S. Kirsch, A. Jungeblut, L. Jenkins, and A. Kolstad. (September 1993). *Adult Literacy in America: A First Look at the Results of the National Adult Literacy Survey*. Washington, DC: US Department of Education.



CHAPTER 1

Overview[*]

Literacy and education are keys to opportunity in this society, and perhaps no one realizes this more clearly than prisoners. An inmate in a maximum security prison reflected on the importance of learning and literacy in this way. "When I first came [to prison] I had a negative attitude. I didn't write. I didn't want to go to school. I didn't think it mattered." His views were changed, however, by another prisoner who was involved in postsecondary education. "He tried to show me how education would help me inside, even more than in the eyes of someone else," this prisoner said. His life in prison changed once he began to take classes. "It made me feel good about myself and gave me hope as to what I could be." He has since earned a General Educational Development (GED) certificate and is now taking college courses.

The results of the National Adult Literacy Survey make it possible, for the first time, to take an in-depth look at the literacy proficiencies of the prison population and at the relationships between literacy and individuals' characteristics and experiences. This large-scale survey, conducted in 1992, grew out of the Adult Education Amendments of 1988, in which the U.S. Congress called upon the Department of Education to report on the definition of literacy and on the nature and extent of literacy among adults in the nation. In response, the department's National Center for Education Statistics (NCES) and the Division of Adult Education and Literacy planned a national household survey of adult literacy. In September 1989, NCES awarded a four-year contract to Educational Testing Service (ETS) to design and administer the survey as well as to analyze and report the results. A subcontract was given to Westat, Inc. for sampling and field operations.

As part of the contract, the survey was to include persons incarcerated in prison in addition to those living in households. The participation of prisoners in the survey would help to provide better estimates of the literacy levels of the

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[*] Portions of this chapter originally appeared in the first report on the National Adult Literacy Survey, I.S. Kirsch, A. Jungeblut, L. Jenkins, and A. Kolstad. (September 1993). *Adult Literacy in America: A First Look at the Results of the National Adult Literacy Survey*. Washington, DC: US Department of Education.

total population and would make it possible to report on the literacy proficiencies of this important segment of our society.

The plan for developing and conducting the survey was guided by a panel of experts from business and industry, labor, government, research, and adult education. This Literacy Definition Committee worked with ETS staff to prepare a definition of literacy that would guide the development of the assessment objectives as well as the selection and construction of assessment tasks. A second panel, the Technical Review Committee, was formed to help ensure the soundness of the assessment design, the quality of the data collected, the integrity of the analyses conducted, and the appropriateness of the interpretations of the final results.

This introduction summarizes the discussions that led to the adoption of a definition of literacy for the National Adult Literacy Survey, the framework used in designing the survey instruments, the populations assessed, the survey administration, and the methods for reporting the results.

Defining and Measuring Literacy

The National Adult Literacy Survey is the third and largest assessment of adult literacy funded by the federal government and conducted by ETS. The two previous efforts included a 1985 household survey of the literacy skills of 21- to 25-year-olds, funded by the U.S. Department of Education, and a 1989-90 survey of the literacy proficiencies of job seekers, funded by the U.S. Department of Labor.[1] The definition of literacy that guided the National Adult Literacy Survey was rooted in these preceding studies.

Building on earlier work in large-scale literacy assessment, the 1985 young adult survey attempted to extend the concept of literacy, to take into account some of the criticisms of previous surveys, and to benefit from advances in educational assessment methodology. The national panel of experts assembled to construct a definition of literacy for that survey rejected the types of arbitrary standards — such as signing one's name, completing five years of school, or scoring at a particular grade level on a school-based measure of reading achievement — that have long been used to make judgements about adults' literacy skills. Through a consensus process, this panel drafted the following definition of literacy, which helped set the framework for the young adult survey:

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[1] I.S. Kirsch and A. Jungeblut. (1986). *Literacy: Profiles of America's Young Adults*. Princeton, NJ: Educational Testing Service. I.S. Kirsch, A. Jungeblut, and A. Campbell. (1992). *Beyond the School Doors: The Literacy Needs of Job Seekers Served by the U.S. Department of Labor*. Princeton, NJ: Educational Testing Service.

Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential.

Unlike traditional definitions of literacy, which focused on decoding and comprehension, this definition encompasses a broad range of skills that adults use in accomplishing the many different types of literacy tasks associated with work, home, and community contexts. This new perspective is shaping not only adult literacy assessment, but policy as well. For example, the National Adult Literacy Act of 1991 defined literacy as "an individual's ability to read, write, and speak in English and compute and solve problems at levels of proficiency necessary to function on the job and in society, to achieve one's goals, and to develop one's knowledge and potential."

The definition of literacy from the young adult survey was adopted by the panel that guided the development of the 1989-90 survey of job seekers, and it also provided the starting point for the discussions of the Literacy Definition Committee of the National Adult Literacy Survey. This committee agreed that expressing the literacy proficiencies of adults in school-based terms or grade-level scores is inappropriate. In addition, while the committee recognized the importance of teamwork skills, interpersonal skills, and communication skills for functioning in various contexts such as the workplace, it was decided that these areas are not part of literacy per se and therefore should not be incorporated into the definition of literacy guiding the survey.

Further, the committee endorsed the notion that literacy is neither a single skill suited to all types of texts, nor an infinite number of skills, each associated with a given type of text or material. Rather, as suggested by the results of the young adult and job seeker surveys, an ordered set of skills appears to be called into play to accomplish diverse types of tasks. Given this perspective, the committee agreed to adopt not only the definition of literacy that was used in the previous surveys, but also the three scales developed as part of those efforts:

> **Prose literacy** — the knowledge and skills needed to understand and use information from texts that include editorials, news stories, poems, and fiction; for example, finding a piece of information in a newspaper article, interpreting instructions from a warranty, inferring a theme from a poem, or contrasting views expressed in an editorial
>
> **Document literacy** — the knowledge and skills required to locate and use information contained in materials that include job applications, payroll forms, transportation schedules, maps, tables, and graphs; for example, locating a particular intersection on a street map, using a schedule to choose the appropriate bus, or entering information on an application form

Quantitative literacy — the knowledge and skills required to apply arithmetic operations, either alone or sequentially, using numbers embedded in printed materials; for example, balancing a checkbook, figuring out a tip, completing an order form, or determining the amount of interest from a loan advertisement

The literacy scales provide a useful way to organize a broad array of tasks and to report the assessment results. They represent a substantial improvement over traditional approaches to literacy assessment, which have tended to report on performance in terms of single tasks or to combine the results from diverse tasks into a single, conglomerate score. Such a score fosters the simplistic notion that "literates" and "illiterates" can be neatly distinguished from one another based on a single cutpoint on a single scale. The literacy scales, on the other hand, make it possible to explore the various types and levels of literacy among different subgroups in our society. In so doing, they help us to understand the diverse information-processing skills associated with the broad range of printed and written materials that adults read and their many purposes for reading them.

In adopting the three scales for use in the National Adult Literacy Survey, the committee's aim was not to establish a single national standard for literacy. Rather, it was to provide an interpretive scheme that would enable levels of prose, document, and quantitative performance to be identified and allow descriptions of the knowledge and skills associated with each level to be developed.

The prose, document, and quantitative scales were built initially to report on the results of the young adult survey and were augmented in the survey of job seekers. The Literacy Definition Committee recommended that a new set of literacy tasks be developed to enhance the scales. These tasks would take into account the following, without losing the ability to compare the results with those of the earlier surveys:

- continued use of open-ended simulation tasks
- continued emphasis on tasks that measure a broad range of information-processing skills and cover a wide variety of contexts
- increased emphasis on simulation tasks that require brief written and/or oral responses
- increased emphasis on tasks that ask respondents to describe how they would set up and solve a problem
- the use of a simple, four-function calculator to solve selected quantitative problems

Approximately 110 new assessment tasks were field tested, and 80 of these were selected for inclusion in the survey, in addition to 85 tasks that were administered in both the young adult and job-seeker assessments. By administering a common set of simulation tasks in each of the three literacy surveys, it is possible to compare results across time and across population groups.

A large number of literacy tasks had to be administered to ensure that the survey would provide good estimates of the literacy proficiencies of the adult population. Yet, no individual could be expected to respond to the entire set of 165 simulation tasks. Accordingly, the survey was designed to give each person participating in the study a subset of the total pool of literacy tasks, while at the same time ensuring that each of the 165 tasks was administered to a nationally representative sample of adults. Literacy tasks were assigned to sections that could be completed in about 15 minutes, and these sections were then compiled into booklets, each of which could be completed in about 45 minutes. During a personal interview, each participant was asked to complete one booklet.

In addition to the time allocated for the literacy tasks, approximately 20 minutes were devoted to obtaining background and personal information from respondents. Two versions of the background questionnaire were administered, one in English and one in Spanish. Major areas explored included: *background and demographics* — country of birth, languages spoken or read, access to reading materials, size of household, educational attainment of parents, age, race/ethnicity, and marital status; *education* — highest grade completed in school, current aspirations, participation in adult education classes, and education received outside the country; *labor market experiences* — employment status, recent labor market experiences, and occupation; *income* — personal as well as household; and *activities* — voting behavior, hours spent watching television, frequency and content of newspaper reading, and use of literacy skills for work and leisure. These background data make it possible to gain an understanding of the ways in which personal characteristics are associated with demonstrated performance on each of the three literacy scales.[2]

Conducting the Survey

The National Adult Literacy Survey was conducted during the first eight months of 1992 with a nationally representative sample of some 13,600 adults residing in households. More than 400 trained interviewers, some of whom were bilingual in English and Spanish, visited nearly 27,000 households to select and interview adults ages 16 and older, each of whom was asked to provide personal and background information and to complete a booklet of literacy tasks. Black and Hispanic households were oversampled to ensure reliable estimates of literacy proficiencies and to permit analyses of the performance of different subpopulations. Those in the household population who agreed to participate in the survey and completed as much of the assessment as their skills allowed were paid $20 for their time in order to maximize response rates.

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[2] A more detailed description of the design and framework can be found in an interim report, *Assessing Literacy: The Framework for the National Adult Literacy Survey*. Washington, DC: National Center for Education Statistics, October 1992 .

In addition, more than 1,100 inmates from some 80 federal and state prisons were included in the survey. To ensure comparability with the national survey, the simulation tasks given to the prison participants were the same as those given to the household survey population. To address issues of particular relevance to the prison population, a special version of the background questionnaire was developed. This instrument drew questions from the 1991 Survey of State Prison Inmates sponsored by the Bureau of Justice Statistics of the U.S. Department of Justice. These included queries about current offenses, criminal history, and prison work assignments, as well as about education and labor force experiences. A certificate of participation was given to all inmates who completed the survey. It was not possible, as originally planned, to pay inmates a $20 incentive in order to ensure that response rates for the prison sample would be as high as those for the household sample. Many prisons have regulations against prisoners receiving money. Furthermore, response rates for prison surveys are typically high. Thus, a certificate of participation was substituted for the monetary incentive.

Finally, to give the states an opportunity to explore the skill levels of their populations, each of the 50 states was invited to participate in a concurrent assessment. While many states expressed an interest, 11 elected to participate in the State Adult Literacy Survey. Approximately 1,000 adults aged 16 to 64 were surveyed in each of the following states:

California
Illinois
Indiana
Iowa
Louisiana
New Jersey
New York
Ohio
Pennsylvania
Texas
Washington

To permit comparisons of the state and national results, the survey instruments administered to the state and national samples were identical and the data were gathered at the same time. A twelfth state, Florida, also participated, but its survey was unavoidably delayed until 1993.

Responses from the national household, the prison, and state samples were combined to yield the best possible performance estimates. In all, more than 26,000 adults gave, on average, more than an hour of their time to complete the instruments. Unfortunately, because of the delayed administration, the results from the Florida survey could not be included in the national estimates. The assessed sample size and corresponding national population size are presented in table 1.1 by the demographic characteristics of the adults who participated in the survey.

Further information on the design of the sample, the survey administration, the statistical analyses and special studies that were conducted, and the validity of the literacy scales will be available in a forthcoming technical report, to be published in 1994.

Reporting the Results

The results of the National Adult Literacy Survey are reported using three scales, each ranging from 0 to 500: a prose scale, a document scale, and a quantitative scale. The scores on each scale represent degrees of proficiency along that particular dimension of literacy. For example, a low score (below 225) on the document scale indicates that an individual has very limited skills in processing information from tables, charts, graphs, maps, and the like (even those that are brief and uncomplicated). On the other hand, a high score (above 375) indicates advanced skills in performing a variety of tasks that involve the use of complex documents.

Survey participants received proficiency scores according to their performance on the survey tasks. A relatively small proportion of the respondents answered only a part of the survey, and a statistical procedure was used to make the best possible estimates of their proficiencies. This procedure and related issues are detailed in the technical report.

Most respondents tended to obtain similar, though not identical, scores on the three literacy scales. This does not mean, however, that the underlying skills involved in prose, document, and quantitative literacy are the same. Each scale provides some unique information, especially when comparisons are made across groups defined by variables such as race/ethnicity, education, and age.

The literacy scales allow us not only to summarize results for various subpopulations, but also to determine the relative difficulty of the literacy tasks included in the survey. In other words, just as individuals receive scale scores according to their performance in the assessment, the literacy tasks receive specific scale values according to their difficulty, as determined by the performance of the adults who participated in the survey. Previous research has shown that the difficulty of a literacy task, and therefore its placement on the literacy scale, is determined by three factors: the *structure of the material* — for example, exposition, narrative, table, graph, map, or advertisement; the

Table 1.1

The National Adult Literacy Survey Sample

Total Population*

	Assessed sample	National population
Total Population	26,091	191,289,250
Sex		
Male	11,770	92,098,158
Female	14,279	98,900,965
Age		
16 to 18 years	1,237	10,423,866
19 to 24 years	3,344	24,514,789
25 to 39 years	10,050	63,277,808
40 to 54 years	6,310	43,794,468
55 to 64 years	2,924	19,503,078
65 years and older	2,214	29,735,489
Race/Ethnicity		
White	17,292	144,967,759
Black	4,963	21,192,151
Hispanic/Mexican	1,776	10,234,806
Hispanic/Puerto Rican	405	2,190,094
Hispanic/Cuban	147	928,116
Hispanic/Central or South American	424	2,607,829
Hispanic/Other	374	2,520,468
Asian or Pacific Islander	438	4,116,356
American Indian or Alaskan Native	189	1,802,724
Other	83	728,948

Prison Population

	Assessed sample	National population
Total	1,147	765,651
Sex		
Male	1,076	722,632
Female	71	43,019
Race/Ethnicity		
White	417	265,602
Black	480	340,308
Hispanic	211	134,048
Asian or Pacific Islander	7	4,106
American Indian or Alaskan Native	27	17,758
Other	5	3,829

*The total population includes adults living in households and those in prison. The sample sizes for subpopulations may not add up to the total sample sizes because of missing data.

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

content of the materials and/or the *context* from which it is drawn — for example, home, work, or community; and the *nature of the task* — that is, what the individual is asked to do with the material, or his or her purpose for using it.[3]

The literacy tasks administered in the NALS varied widely in terms of materials, content, and task requirements, and thus in terms of difficulty. This range is captured in figure 1, which describes some of the literacy tasks and indicates their scale values.

Even a cursory review of this display reveals that tasks at the lower end of each scale differ from those at the high end. A more careful analysis of the range of tasks along each scale provides clear evidence of an ordered set of information-processing skills and strategies. On the prose scale, for example, tasks with low scale values tend to ask readers to locate or identify information in brief, familiar, or uncomplicated materials, while those at the high end ask them to perform more demanding activities using materials that tend to be lengthy, unfamiliar, or complex. Similarly, on the document and quantitative scales, the tasks at the low end of the scale differ from those at the high end in terms of the structure of the materials, the content and context of the material, and the nature of the directive.

In an attempt to capture this progression of information-processing skills and strategies, each scale was divided into five levels: *Level 1* (0 to 225), *Level 2* (226 to 275), *Level 3* (276 to 325), *Level 4* (326 to 375), and *Level 5* (376 to 500). The points and score ranges that separate these levels on each scale reflect shifts in the literacy skills and strategies required to perform increasingly complex tasks. The survey tasks were assigned to the appropriate point on the appropriate scale based on their difficulty as reflected in the performance of a nationally representative sample of adults surveyed. Analyses of the types of materials and demands that characterize each level reveal the progression of literacy demands along each scale (figure 2). (See appendix A for a detailed discussion of the levels for each scale.)

While the literacy levels on each scale can be used to explore the range of literacy demands, these data do not reveal the types of literacy demands that are associated with particular contexts in this pluralistic society. That is, they do not enable us to say what specific level of prose, document, or quantitative skill is required to obtain, hold, or advance in a particular occupation, to manage a household, or to obtain legal or community services, for example. Nevertheless, the relationships among performance on the three scales and various social or economic indicators can provide valuable insights.

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[3] I.S. Kirsch and P.B. Mosenthal. (1990). "Exploring Document Literacy: Variables Underlying the Performance of Young Adults," *Reading Research Quarterly*, 25, pp. 5-30. P.B. Mosenthal and I.S. Kirsch. (1992). "Defining the Constructs of Adult Literacy," paper presented at the National Reading Conference, San Antonio, Texas.

NALS **Figure 1**

Difficulty Values of Selected Tasks Along the Prose, Document, and Quantitative Literacy Scales

	Prose	Document	Quantitative
0	**149** Identify country in short article **210** Locate one piece of information in sports article **224** Underline sentence explaining action stated in short article	**69** Sign your name **151** Locate expiration date on driver's license **180** Locate time of meeting on a form **214** Using pie graph, locate type of vehicle having specific sales	**191** Total a bank deposit entry
225	**226** Underline meaning of a term given in government brochure on supplemental security income **250** Locate two features of information in sports article	**232** Locate intersection on a street map **245** Locate eligibility from table of employee benefits **259** Identify and enter background information on application for social security card	**238** Calculate postage and fees for certified mail **246** Determine difference in price between tickets for two shows **270** Calculate total costs of purchase from an order form
275	**275** Interpret instructions from an appliance warranty **280** Write a brief letter explaining error made on a credit card bill **304** Read a news article and identify a sentence that provides interpretation of a situation **316** Read lengthy article to identify two behaviors that meet a stated condition	**277** Identify information from bar graph depicting source of energy and year **296** Use sign out sheet to respond to call about resident **314** Use bus schedule to determine appropriate bus for given set of conditions **323** Enter information given into an automobile maintenance record form	**278** Using calculator, calculate difference between regular and sale price from an advertisement **308** Using calculator, determine the discount from an oil bill if paid within 10 days
325	**328** State in writing an argument made in lengthy newspaper article **347** Explain difference between two types of employee benefits **359** Contrast views expressed in two editorials on technologies available to make fuel-efficient cars **362** Generate unfamiliar theme from short poems **374** Compare two metaphors used in poem	**342** Identify the correct percentage meeting specified conditions from a table of such information **348** Use bus schedule to determine appropriate bus for given set of conditions	**325** Plan travel arrangements for meeting using flight schedule **331** Determine correct change using information in a menu **350** Using information stated in news article, calculate amount of money that should go to raising a child **368** Using eligibility pamphlet, calculate the yearly amount a couple would receive for basic supplemental security income
375	**382** Compare approaches stated in narrative on growing up **410** Summarize two ways lawyers may challenge prospective jurors **423** Interpret a brief phrase from a lengthy news article	**379** Use table of information to determine pattern in oil exports across years **387** Using table comparing credit cards, identify the two categories used and write two differences between them **396** Using a table depicting information about parental involvement in school survey to write a paragraph summarizing extent to which parents and teachers agree	**375** Calculate miles per gallon using information given on mileage record chart **382** Determine individual and total costs on an order form for items in a catalog **405** Using information in news article, calculate difference in times for completing a race **421** Using calculator, determine the total cost of carpet to cover a room
500			

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

Figure 2

Description of the Prose, Document, and Quantitative Literacy Levels

	Prose	Document	Quantitative
Level 1 0-225	Most of the tasks in this level require the reader to read relatively short text to locate a single piece of information which is identical to or synonymous with the information given in the question or directive. If plausible but incorrect information is present in the text, it tends not to be located near the correct information.	Tasks in this level tend to require the reader either to locate a piece of information based on a literal match or to enter information from personal knowledge onto a document. Little, if any, distracting information is present.	Tasks in this level require readers to perform single, relatively simple arithmetic operations, such as addition. The numbers to be used are provided and the arithmetic operation to be performed is specified.
Level 2 226-275	Some tasks in this level require readers to locate a single piece of information in the text; however, several distractors or plausible but incorrect pieces of information may be present, or low-level inferences may be required. Other tasks require the reader to integrate two or more pieces of information or to compare and contrast easily identifiable information based on a criterion provided in the question or directive.	Tasks in this level are more varied than those in Level 1. Some require the readers to match a single piece of information; however, several distractors may be present, or the match may require low-level inferences. Tasks in this level may also ask the reader to cycle through information in a document or to integrate information from various parts of a document.	Tasks in this level typically require readers to perform a single operation using numbers that are either stated in the task or easily located in the material. The operation to be performed may be stated in the question or easily determined from the format of the material (for example, an order form).
Level 3 276-325	Tasks in this level tend to require readers to make literal or synonymous matches between the text and information given in the task, or to make matches that require low-level inferences. Other tasks ask readers to integrate information from dense or lengthy text that contains no organizational aids such as headings. Readers may also be asked to generate a response based on information that can be easily identified in the text. Distracting information is present, but is not located near the correct information.	Some tasks in this level require the reader to integrate multiple pieces of information from one or more documents. Others ask readers to cycle through rather complex tables or graphs which contain information that is irrelevant or inappropriate to the task.	In tasks in this level, two or more numbers are typically needed to solve the problem, and these must be found in the material. The operation(s) needed can be determined from the arithmetic relation terms used in the question or directive.
Level 4 326-375	These tasks require readers to perform multiple-feature matches and to integrate or synthesize information from complex or lengthy passages. More complex inferences are needed to perform successfully. Conditional information is frequently present in tasks at this level and must be taken into consideration by the reader.	Tasks in this level, like those at the previous levels, ask readers to perform multiple-feature matches, cycle through documents, and integrate information; however, they require a greater degree of inferencing. Many of these tasks require readers to provide numerous responses but do not designate how many responses are needed. Conditional information is also present in the document tasks at this level and must be taken into account by the reader.	These tasks tend to require readers to perform two or more sequential operations or a single operation in which the quantities are found in different types of displays, or the operations must be inferred from semantic information given or drawn from prior knowledge.
Level 5 376-500	Some tasks in this level require the reader to search for information in dense text which contains a number of plausible distractors. Others ask readers to make high-level inferences or use specialized background knowledge. Some tasks ask readers to contrast complex information.	Tasks in this level require the reader to search through complex displays that contain multiple distractors, to make high-level text-based inferences, and to use specialized knowledge.	These tasks require readers to perform multiple operations sequentially. They must disembed the features of the problem from text or rely on background knowledge to determine the quantities or operations needed.

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

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About This Report

This report looks at the literacy skills of the prison population from several vantage points. Chapter 2 profiles the literacy skills of the prison population as a whole and of various subgroups defined by gender, race/ethnicity, age, level of education, and disabilities and compares them with the household population. Chapter 3 explores the relationship between inmates' background and experiences before incarceration and their literacy proficiencies. Chapter 4 discusses their prison experiences and the literacy proficiencies associated with those who participate in various prison programs. In chapter 5, the relationship between literacy proficiency and recidivism is examined. Chapter 6 explores the comparison between the literacy practices of the prison and household populations, as well as self-perceptions of their literacy ability.

In interpreting the results of this study, readers should bear in mind that the literacy tasks contained in this assessment and the adults invited to participate in the survey are samples drawn from their two respective universes. As such, the results are subject to some measurable degree of uncertainty. Scientific procedures employed in the study design and the scaling of literacy tasks permit a high degree of confidence in the resulting estimates of task difficulty. Similarly, the sampling design and weighting procedures applied in this survey assure that participants' responses can be generalized to the populations of interest. Discussions of differences between various subpopulations are based on statistical tests that consider the magnitude of the differences (for example, the difference in average document proficiency between high school and college graduates), the size of the standard errors associated with the numbers being compared, and the number of comparisons being made. Only statistically significant differences (at the .05 level) are discussed in this report. Particularly because of the small sample size of the prison population, readers who are interested in making their own comparisons are therefore advised not to use the numbers alone to compare various groups, but rather to rely on statistical tests.

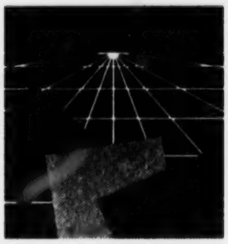
The goal of this report is to provide useful information to all those who wish to understand the current status of literacy among the nation's prison population and to strengthen existing literacy policies and programs. In considering the results, the reader should keep in mind that this was a survey of literacy in the English language — not literacy in any universal sense of the word. Thus, the results do not capture the literacy resources and abilities that respondents may possess in languages other than English.

A Note on Interpretations

In reviewing the information contained in this report, readers should be aware that no single factor determines what an individual's literacy proficiencies will be. All of us develop our own unique repertoire of competencies depending on a wide array of conditions and circumstances, including our family backgrounds, educational attainments, interests and aspirations, economic resources, and employment experiences. Any single survey, this one included, can focus on only some of these variables.

Further, while the results reveal certain characteristics that are related to literacy, the nature of the survey makes it impossible to determine the direction of these relationships. In other words, it is impossible to identify the extent to which literacy shapes particular aspects of our lives or is, in turn, shaped by them. For example, there is a strong relationship between educational attainment and literacy proficiencies. On the one hand, it is likely that staying in school longer does strengthen an individual's literacy skills. On the other hand, it is also true that those with more advanced skills tend to remain in school longer. Other variables, as well, are likely to play a role in the relationship between literacy and education. In interpreting such relationships in this report, the authors strive to acknowledge the many factors involved.

A final note deserves emphasis. This report describes the literacy proficiencies of various subpopulations defined by characteristics such as age, sex, race, ethnicity, and educational background. While certain groups demonstrate lower literacy skills than others, on average, within every group there are some individuals who perform well and some who perform poorly. Accordingly, when one group is said to have lower average proficiencies than another, this does not imply that all adults in the first group perform worse than those in the second. Such statements are only intended to highlight general patterns of differences among various groups and, therefore, do not capture the variability within each group.



CHAPTER 2

The Prose, Document, and Quantitative Literacy Skills of America's Prisoners

At the same time that the National Adult Literacy Survey was assessing the literacy skills of America's households, a representative sample of state and federal prison inmates was also assessed. There were two reasons for assessing prisoners' literacy skills: to increase the accuracy of national subpopulation estimates and to provide information on the literacy skills of federal and state prisoners. Prison inmates have been included in national figures published in other reports from the survey to give a more precise estimate of the literacy proficiencies of subgroups of the adult population. In this report, the literacy levels of the prison and household groups are reported separately to provide a profile of the literacy skills of prisoners and to compare them with the household population. Prisons and not jails were selected for the survey because the Federal government has been mandated by Congress "to assist State and local educational programs for criminal offenders in correctional institutions."[1] Prisons house about 65 percent of the incarcerated population and inmates are generally held for longer periods of time than those confined in jails and community-based facilities.

This chapter of the report describes multiple dimensions of prisoner literacy and compares the prose, document, and quantitative literacy skills of prisoners to those of the adult household population. This chapter also examines and compares literacy proficiencies of the prisoner and household populations by the subgroups of educational attainment, race/ethnicity, sex, and age, as well as by disabilities.

In this report, the results are examined in two ways. First, general comparisons of literacy proficiency are made by examining the average performance of various subpopulations on each of the literacy scales. This is the preferred method for this report because of the size of the sample of prison inmates interviewed. Second, percentage distributions of each population in the five levels of each scale are also presented to provide a range of literacy proficiency for both the prison and household populations. As described in chapter 1, five literacy levels were defined along the prose, document, and quantitative scales: Level 1 (ranging from 0 to 225), Level 2 (226 to 275), Level 3 (276 to 325), Level 4 (326 to 375), and Level 5 (376 to 500).

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[1] Public Law 101-392 section 214 (a) (2) September 28, 1990.

The Correctional Population at the End of 1991

At the end of 1991, an estimated 4,641,000 adults in this country were under some form of correctional supervision (table 2.1 — data are from the Bureau of Justice Statistics, 1991 and, therefore, are different from this survey's population estimates. The Bureau of Justice Statistics' survey included community-based as well a confinement facilities, whereas this survey included only confinement facilities.). Approximately 17 percent of these individuals were in prison, 13 percent on parole, 9 percent in jail, and 61 percent on probation. About 1,350 persons out of every 100,000 in the general population were serving probation or parole sentences while living among the general population. Consequently, a little over 1 percent of the household population as defined in this report were under criminal justice supervision in the community at the time of the survey. For every 100,000 residents in the general population, the jails and prisons of the country held about 480 prisoners — or about 0.5 percent of the size of the general population. Persons held in prison constitute an even smaller number compared with the general population — about 0.3 percent.

Table 2.1

Adult Correctional Population, Year-End 1991

CRIMINAL JUSTICE STATUS	Number	Rate per 100,000 residents
Total	4,641,000*	1829.6
Probation	2,819,000*	1111.3
Jail	424,129	167.2
Prison	792,176**	312.3
Parole	606,000*	238.9

*Estimated
**Includes both confinement and community-based facilities.

Source: Bureau of Justice Statistics, Correctional Populations in the United States, 1990 and Correctional Populations in the United States, 1991.

Characteristics of the Prison and Household Populations

Prison inmates differ from the household population with respect to many demographic characteristics (table 2.2). Generally, prison inmates are more likely to be male, minority, young, and less educated than the household population. The vast majority of prison inmates are male (94 percent), while less than half of the household population is male (48 percent). Almost two-thirds of prison inmates belong to some racial or ethnic minority, compared with about one-quarter of the household population. Almost 65 percent of prison inmates are below the age of 35, compared with 40 percent of the household population. About 20 percent of the prison population, compared with 45 percent of the household population, has had some education beyond high school; 49 percent of the prison population, compared with 24 percent of the household population, did not complete either high school or a GED.

Results for the Prison Population

Thirty-one percent of prison inmates perform in Level 1 on the prose literacy scale, 33 percent are in this level on the document scale, and 40 percent on the quantitative scale (table 2.3). This means that approximately 237,000 to 306,000 of 766,000 prison inmates perform in the lowest level on each of the literacy scales. Prison inmates at this level may be able to read short pieces of text to find a single fact, enter personal information on a document, or add numbers that are set up in a column format. Other inmates in Level 1, however, do not demonstrate the ability to perform even these fairly straightforward literacy tasks.

Performing in Level 2 are about 37 percent of prison inmates on the prose scale, 38 percent on the document scale, and 32 percent on the quantitative scale — about 245,000 to 291,000 prisoners. Prisoners at this level on the prose scale can generally make low-level inferences based on what they read and integrate two or more pieces of information. Those in Level 2 on the document scale can locate a piece of information in a document in which plausible but inexact information is present and can integrate information from various parts of a document. Prisoners in Level 2 on the quantitative scale can correctly add, subtract, multiply, or divide simple numbers found in a text.

Between 22 percent and 26 percent of prisoners — about 169,000 to 199,000 prisoners in all — could perform literacy tasks in Level 3. Prisoners in this level on the prose scale could integrate information from relatively long or dense text, and those in this level on the document scale could integrate

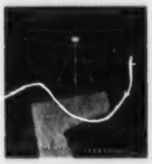

TABLE 2.2

Percentages of Adults in Prison and Household Populations, by Various Demographic Characteristics

CHARACTERISTICS	Prison CPCT (SE)	Household CPCT (SE)
Gender		
Male	94 (0.0)	48 (0.0)
Female	6 (0.0)	52 (0.0)
Race/Ethnicity		
White	35 (0.6)	76 (0.5)
Black	44 (0.0)	11 (0.0)
Asian or Pacific Islander	1 (0.2)	2 (0.2)
American Indian or Alaskan Native	2 (0.4)	1 (0.3)
Other	0† (0.2)	0† (0.1)
Hispanic groups	18 (0.4)	10 (0.2)
Age		
16 to 18	2 (0.4)	5 (0.1)
19 to 24	21 (1.3)	13 (0.2)
25 to 34	41 (1.8)	22 (0.2)
35 to 54	33 (1.4)	34 (0.3)
55 to 64	2 (0.4)	10 (0.2)
65 and older	1 (0.3)	16 (0.2)
Level of Education		
0 to 8 years	14 (0.1)	10 (0.3)
9 to 12 years	35 (1.1)	14 (0.2)
High school diploma	14 (1.1)	28 (0.2)
GED	17 (1.0)	4 (0.2)
Some postsecondary	16 (0.8)	22 (0.2)
Postsecondary degree	4 (0.4)	23 (0.2)

CPCT = column percentage estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

† Percentages less than 0.5 are rounded to 0.

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

TABLE 2.3

Percentages at Each Level and Average Proficiencies on Each Literacy Scale of Prison and Household Populations

LITERACY SCALES BY POPULATIONS			LEVELS AND AVERAGE PROFICIENCY					
			Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average proficiency
	n	WGT N (/1,000)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Prose								
Prison	1,147	766	31 (1.7)	37 (2.0)	26 (1.6)	6 (0.8)	0† (0.2)	246 (1.9)
Household	24,944	190,524	21 (0.4)	27 (0.6)	32 (0.7)	17 (0.4)	3 (0.2)	273 (0.6)
Document								
Prison	1,147	766	33 (2.1)	38 (2.1)	25 (1.5)	4 (0.9)	0† (0.2)	240 (2.2)
Household	24,944	190,524	23 (0.4)	28 (0.5)	31 (0.5)	15 (0.4)	3 (0.2)	267 (0.7)
Quantitative								
Prison	1,147	766	40 (1.9)	32 (2.2)	22 (1.9)	6 (1.0)	1 (0.4)	236 (3.1)
Household	24,944	190,524	22 (0.5)	25 (0.6)	31 (0.6)	17 (0.3)	4 (0.2)	271 (0.7)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

† Percentages less than 0.5 are rounded to 0.

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

multiple pieces of information found in documents. Prisoners in Level 3 on the quantitative scale could perform arithmetic operations using two or more numbers found in printed material.

About 6 percent of inmates, or about 46,000, could successfully perform Level 4 tasks on the prose scale and, thus, could synthesize information from lengthy or complex passages. Four percent, about 31,000, are in Level 4 on the document scale and are able to make inferences based on text and documents. Six percent perform in Level 4 of the quantitative scale; they can perform sequential arithmetic operations using numbers found in different types of displays.

Less than 0.5 percent of prison inmates perform in Level 5 on the prose and document scales and about 1 percent on the quantitative scale. To perform in Level 5 on the prose scale, one must contrast complex information found in written materials or make high level inferences or search for information in dense text. Level 5 on the document scale requires readers to use specialized knowledge and search complex displays for particular pieces of information. To achieve this level on the quantitative scale, respondents must determine the features of arithmetic problems either by examining text or by using background knowledge and then perform the multiple arithmetic operations required. Very few inmates, 8,000 or fewer, perform in this level.

Comparison of the Prison and Household Populations

Prisoners are more likely than the household population to perform in the lower levels of the three scales (table 2.3). About one in three prison inmates performs in Level 1 on the prose scale, compared with one in five of the household population. About 33 percent of prison inmates and 23 percent of the household population perform in Level 1 on the document scale, and 40 percent of prisoners and 22 percent of household respondents on the quantitative scale. Thus, the differences in percentages performing in Level 1 are 10 for the prose and document scales and 18 for the quantitative scale.

Compared with the household population, relatively few prisoners perform in Levels 4 and 5. Six percent of prisoners, compared with 20 percent of the household population, are in Levels 4 and 5 on the prose scale; 4 percent of inmates, compared with 18 percent of the household population, on the document scale; and 7 percent of prisoners, compared with 21 percent of householders, on the quantitative scale.

Average proficiency scores on the three scales are also lower for prisoners than for the household population. Although both prisoners and householders, on average, perform in Level 2, prisoners' proficiency scores are 27 points lower on the prose and document scales than those of householders and 35 points lower on the quantitative scale, placing inmates below the middle of the Level 2 range.

Thus, prisoners consistently demonstrate lower proficiency than the household population on all three scales, whether measured by the distribution of prisoners in the levels of each scale or by their average proficiency scores.

Comparisons of the Prison and Household Populations by Education, Race/Ethnicity, Sex, and Age

As was pointed out previously, the prisoner population varies from the household population by such characteristics as gender, race/ethnicity, educational attainment, and age. The next question is whether these differences are related to the lower scores of prisoners as compared with those of the household population. For example, are proficiency scores of the prison population lower because fewer of them attained higher levels of education as compared with the household population? In this section, each of these background characteristics, namely, level of education, race/ethnicity, gender, and age, will be examined separately. Also, race/ethnicity and educational attainment will be combined and the proficiencies compared within each group to see if overrepresentation of minorities and of those with low levels of education can explain the differences in the proficiencies of prisoners and householders. Finally results of a regression analysis will be discussed.

Results by Educational Attainment

As shown in table 2.2, the prison population attained lower levels of education than the household population. Greater percentages of prisoners than householders attained less than a high school diploma; 14 percent of prisoners have 0 to 8 years of education, compared with 10 percent of householders, and 35 percent of prisoners have 9 to 12 years of education compared with 14 percent of householders. While a greater percentage of householders than prisoners have a high school diploma (28 and 14 percent, respectively), 17 percent of prisoners have a GED, compared with 4 percent of householders. It may be that many prisoners have gained their high school equivalency certificate while in prison. Nonetheless, 31 percent of prisoners and 32 percent of householders have a high school diploma or GED. On the other hand, a lower percentage of prisoners than householders have some postsecondary education (16 compared with 22 percent) or a postsecondary degree (4 compared with 23 percent).

Not surprisingly, since the business of educational institutions is to transmit literacy skills, literacy scores are highly related to educational attainment (table 2.4). First of all, the average proficiencies of inmates are related to educational attainment. The proficiencies of inmates with some postsecondary education range from 275 to 285 on the three scales and are higher than the proficiencies of inmates with a high school diploma. These inmates, as well as those who have a GED, demonstrate higher proficiencies than inmates with 9 to 12 years of education. Inmates with 0 to 8 years of education demonstrate lower proficiencies, ranging from 176 to 196 on the three scales, than those with 9 to 12 years. While the proficiencies of inmates with a GED appear to be higher than those of inmates with a high school diploma, the differences do not reach statistical significance. Inmates with a GED, however, demonstrate proficiencies that are the same as those of inmates with postsecondary education on the prose and quantitative scales.

Second, as the educational attainment of inmates increases, the percentage of inmates performing in Level 1 generally decreases. For example, 65 to 70 percent of prisoners who reported 0 to 8 years of education perform in Level 1 on the three scales, compared with 41 to 51 percent of prisoners with 9 to 12 years of education. On all three scales, the percentages of inmates with a high school diploma in Level 1 are about the same as those of inmates with 9 to 12 years of education; however, the percentages of inmates with a GED performing in Level 1 (10 to 21 percent) are less than those of inmates with 9 to 12 years. Furthermore, about the same percentages of inmates with a GED as inmates with some postsecondary (10 to 15 percent) perform in Level 1, while the percentages in Level 1 for high school graduates are greater than the percentages for inmates with some postsecondary education.

When inmate and household populations are compared, inmates with a GED demonstrate proficiencies comparable to those of householders with a GED — about 270 on the prose scale and 265 on the document and quantitative scales. In addition, about the same percentages of both prison and household GED holders perform in Level 1 on all three scales. In contrast, the average proficiencies of inmates with a high school diploma are lower on all three scales than those of householders with the same education level. Furthermore, significantly more inmate graduates than household graduates perform in Level 1 on the quantitative scale and significantly fewer inmates perform in Level 4 on the prose scale. Thus, inmates with a GED appear to have an advantage over inmates with a high school diploma. Inmate GED holders demonstrate about the same proficiencies as inmates with some postsecondary education, while inmate high school graduates demonstrate lower proficiencies. In addition, inmate GED holders demonstrate the same proficiencies as household GED holders. In contrast, inmate graduates demonstrate lower proficiencies than their household counterparts.

Table 2.4

Percentages at Each Level and Average Proficiencies on Each Literacy Scale of Prison and Household Populations, by Educational Attainment

LITERACY SCALES BY EDUCATION BY POPULATIONS			LEVELS AND AVERAGE PROFICIENCIES					
			Level 1 225 or lower	Level 2 226-275	Level 3 276-325	Level 4 326-375	Level 5 376 or higher	Average proficiency
	n	WGT N (/1,000)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Prose								
0 to 8 years								
Prison	157	107	66 (4.2)	24 (3.8)	10 (4.0)	1 (0.6)	0*(0.0)	196 (5.0)
Household	2,167	18,256	75 (1.7)	20 (1.4)	4 (0.9)	0*(0.3)	0*(0.0)	177 (2.6)
9 to 12 years								
Prison	385	271	41 (3.1)	44 (3.5)	14 (2.4)	1 (0.6)	0*(0.0)	230 (3.0)
Household	3,311	24,982	42 (1.4)	38 (1.1)	17 (1.0)	2 (0.4)	0*(0.1)	231 (1.5)
GED								
Prison	183	130	10 (3.1)	44 (4.9)	39 (5.6)	6 (3.0)	0*(0.3)	270 (4.3)
Household	1,062	7,224	14 (1.6)	39 (2.5)	39 (2.8)	7 (1.2)	0*(0.6)	268 (1.8)
High school								
Prison	154	107	25 (5.3)	39 (5.0)	32 (6.0)	5 (2.0)	0*(0.0)	255 (5.0)
Household	6,107	51,290	16 (0.8)	36 (1.3)	37 (1.7)	10 (0.9)	1 (0.2)	270 (1.1)
Postsecondary								
Prison	264	149	10 (2.0)	27 (3.6)	42 (3.7)	19 (3.4)	2 (1.1)	285 (3.7)
Household	12,143	80,426	5 (0.3)	17 (0.6)	39 (0.8)	32 (0.8)	7 (0.4)	310 (0.8)
Document								
0 to 8 years								
Prison	157	107	69 (3.6)	23 (4.1)	7 (2.6)	1 (0.5)	0*(0.0)	176 (6.1)
Household	2,167	18,256	79 (1.7)	18 (1.6)	3 (0.8)	0*(0.1)	0*(0.0)	170 (2.4)
9 to 12 years								
Prison	385	271	41 (3.0)	43 (3.9)	14 (2.7)	2 (1.0)	0*(0.0)	230 (2.8)
Household	3,311	24,982	46 (1.7)	37 (1.6)	15 (1.3)	2 (0.4)	0*(0.1)	227 (1.6)
GED								
Prison	183	130	16 (3.3)	47 (6.2)	32 (5.0)	4 (2.7)	0*(0.3)	263 (4.3)
Household	1,062	7,224	17 (2.0)	42 (2.7)	34 (2.3)	7 (1.1)	0*(0.5)	264 (2.2)
High school								
Prison	154	107	27 (4.9)	37 (5.7)	32 (4.7)	4 (2.4)	0*(0.0)	251 (5.6)
Household	6,107	51,290	20 (0.8)	38 (1.0)	33 (1.1)	9 (0.6)	1 (0.2)	264 (1.1)
Postsecondary								
Prison	264	149	11 (2.1)	31 (3.1)	44 (4.1)	13 (2.9)	1 (0.8)	279 (3.0)
Household	12,143	80,426	6 (0.3)	20 (0.6)	39 (0.6)	29 (0.8)	6 (0.4)	303 (0.7)

n = sample size; WGT N = population size estimate /1,000 (the sample sizes for subpopulations may not add up to the total sample sizes because of missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

* Percentages less than 0.5 are rounded to zero.

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Survey, 1992.

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Table 2.4 (continued)

Percentages at Each Level and Average Proficiencies on Each Literacy Scale of Prison and Household Populations, by Educational Attainment

LITERACY SCALES BY EDUCATION BY POPULATIONS			LEVELS AND AVERAGE PROFICIENCIES					
			Level 1 225 or lower	Level 2 226-275	Level 3 276-325	Level 4 326-375	Level 5 376 or higher	Average proficiency
	n	WGT N (/1,000)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Quantitative								
0 to 8 years								
Prison	157	107	70 (5.1)	21 (3.5)	7 (2.6)	2 (1.4)	0*(0.4)	182 (8.4)
Household	2,167	18,268	76 (2.0)	18 (1.8)	5 (1.1)	1 (0.3)	0*(0.2)	169 (3.1)
9 to 12 years								
Prison	386	271	51 (2.8)	34 (3.4)	13 (2.1)	2 (0.9)	0*(0.3)	219 (3.5)
Household	3,611	24,362	45 (1.6)	34 (1.6)	17 (1.3)	3 (0.6)	0*(0.1)	227 (1.7)
GED								
Prison	183	130	21 (5.2)	40 (5.6)	32 (5.7)	7 (2.5)	0*(1.4)	263 (4.6)
Household	1,082	7,224	16 (2.0)	38 (2.5)	35 (2.5)	10 (1.4)	1 (0.5)	268 (2.7)
High school								
Prison	154	107	36 (5.0)	32 (5.8)	26 (4.3)	6 (3.0)	0*(0.3)	244 (6.7)
Household	6,107	51,290	18 (0.8)	33 (1.1)	37 (1.1)	12 (0.5)	1 (0.2)	270 (1.1)
Postsecondary								
Prison	264	149	15 (3.2)	30 (4.5)	37 (4.5)	15 (3.1)	3 (1.1)	276 (3.4)
Household	12,143	80,426	5 (0.3)	17 (0.6)	38 (0.8)	31 (0.7)	8 (0.4)	310 (0.9)

n = sample size; WGT N = population size estimate /1,000 (the sample sizes for subpopulations may not add up to the total sample sizes because of missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

* Percentages less than 0.5 are rounded to zero.

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Survey, 1992.

Results by Race/Ethnicity

On all three literacy scales, White prisoners demonstrate higher average literacy skills than Black prisoners, who show greater proficiency than Hispanic prisoners (table 2.5). The proficiency scores of White prisoners are, on average, 28 points higher than those of Black prisoners and 62 points higher than scores of Hispanic prisoners on the prose scale; the scores of Black prisoners are 34 points higher than those of Hispanic prisoners. On the document scale, the proficiency scores of White inmates are an average of 38 points higher than the scores of Black inmates, and Black inmates' scores are 34 points higher than Hispanic inmates' scores. On the quantitative scale, the proficiency scores of

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TABLE 2.5

Percentages at Each Level and Average Proficiencies on Each Literacy Scale of Prison and Household Populations, by Race/Ethnicity

LITERACY SCALES BY RACE/ETHNICITY BY POPULATIONS			LEVELS AND AVERAGE PROFICIENCY					
			Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average proficiency
	n	WGT N (/1,000)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Prose								
White								
Prison	417	266	17 (2.2)	35 (2.6)	36 (3.0)	11 (2.3)	1 (0.5)	270 (3.3)
Household	16,875	144,702	14 (0.4)	25 (0.6)	36 (0.8)	21 (0.5)	4 (0.3)	286 (0.7)
Black								
Prison	480	340	33 (2.4)	43 (3.4)	21 (2.5)	3 (0.8)	0† (0.2)	242 (2.6)
Household	4,483	20,852	38 (1.2)	37 (1.4)	21 (1.0)	4 (0.6)	0† (0.2)	237 (1.4)
Hispanic								
Prison	211	134	55 (3.3)	27 (3.5)	16 (3.8)	2 (1.1)	0† (0.3)	208 (4.6)
Household	2,915	18,347	49 (1.5)	26 (1.4)	19 (1.5)	6 (0.8)	1 (0.3)	215 (2.2)
Document								
White								
Prison	417	266	17 (2.6)	34 (2.9)	39 (2.4)	10 (2.2)	1 (0.4)	270 (3.4)
Household	16,875	144,702	16 (0.5)	27 (0.6)	34 (0.7)	19 (0.5)	3 (0.2)	280 (0.8)
Black								
Prison	480	340	39 (3.5)	44 (3.2)	16 (2.0)	1 (0.7)	0† (0.0)	232 (3.2)
Household	4,483	20,852	43 (1.0)	36 (1.2)	18 (0.9)	3 (0.4)	0† (0.1)	230 (1.2)
Hispanic								
Prison	211	134	53 (3.6)	29 (3.9)	16 (3.2)	2 (1.7)	0† (0.4)	198 (4.9)
Household	2,915	18,347	50 (1.7)	26 (1.6)	18 (1.4)	5 (0.8)	1 (0.3)	213 (2.5)
Quantitative								
White								
Prison	417	266	21 (2.5)	31 (3.7)	34 (3.1)	12 (2.4)	2 (0.7)	267 (3.4)
Household	16,875	144,702	14 (0.5)	24 (0.6)	35 (0.7)	21 (0.4)	5 (0.2)	287 (0.8)
Black								
Prison	480	340	49 (3.1)	34 (2.9)	15 (2.1)	2 (0.8)	0† (0.1)	223 (4.5)
Household	4,483	20,852	46 (1.0)	34 (1.1)	17 (1.0)	3 (0.4)	0† (0.1)	224 (1.4)
Hispanic								
Prison	211	134	57 (3.7)	26 (4.7)	14 (3.8)	3 (1.9)	0† (0.6)	201 (6.1)
Household	2,915	18,347	50 (1.3)	25 (1.3)	19 (1.3)	5 (1.1)	1 (0.2)	212 (2.5)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

† Percentages less than 0.5 are rounded to 0.

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

White inmates are 44 points higher on average than those of Black inmates and 66 points higher than those of Hispanic inmates. These differences among inmates mirror differences among adults in the household population, in which the proficiency scores of White adults are 49 to 63 points higher than those of Black adults and the scores of Black adults are 12 to 22 points higher than those of Hispanic adults, on average.

White prisoners demonstrate lower proficiencies than White adults in the household population on all three literacy scales. On average, their prose proficiency is 16 points lower, their document proficiency 10 points lower, and their quantitative 20 points lower than the proficiencies of the White household population. On the other hand, the proficiency scores of Black and Hispanic prisoners tend to be about the same as those of their counterparts in the household population. The exception occurs among Hispanic adults on the document scale, where prisoners demonstrate lower average proficiency than adults in households (198 compared with 213, respectively).

Results by Educational Attainment and Race/Ethnicity

Since both educational attainment and race are related to literacy proficiency, we will examine them together to see if both factors act to depress the literacy scores of the prison population as compared with the household population. As was previously noted, the racial composition of the prison population differs from that of the household population. While the prison population is 35 percent White, 44 percent Black, and 18 percent Hispanic, the household population is 76 percent White, 11 percent Black, and 10 percent Hispanic. Minority adults, both in prisons and households, have less education, on average, than White adults. In the prison population, White inmates average 11.3 years of schooling, Black inmates 10.8, and Hispanic inmates 9.6. In the household population, White adults average 12.8 years of schooling, Black adults 11.6 years, and Hispanic adults 10.2 years (table 2.6).

Prisoners have less education on average than their racial or ethnic counterparts in the household population. White prisoners have about one and one-half years less education than White householders, Black prisoners have almost a year less than Black householders, and Hispanic prisoners have about one-half year less than Hispanic householders. Only about 2 in 10 White householders have less than a high school diploma while almost 4 in 10 White prisoners have not graduated from high school or received a GED. Over half of the Black prisoners, compared with about one-third of Black adults in the household population, have not completed high school. Sixty-one percent of Hispanic inmates, compared with 46 percent of Hispanic householders, have less than a high school diploma. While minorities are overrepresented in the

Table 2.6

Percentages of Prison and Household Populations Attaining Each Education Level and Average Years of Schooling, by Race/Ethnicity

RACE/ ETHNICITY BY POPULATIONS			EDUCATION			
			0 to 12 years	High school/GED	Post-secondary	Average years of schooling
	n	WGT N (/1,000)	RPCT (SE)	RPCT (SE)	RPCT (SE)	Mean
White						
Prison	417	288	38 (2.0)	38 (2.2)	25 (1.3)	11.3 (0.1)
Household	16,298	139,011	19 (0.3)	33 (0.3)	48 (0.4)	12.8 (0.0)
Black						
Prison	479	339	55 (1.8)	29 (1.6)	16 (0.9)	10.8 (0.1)
Household	4,282	19,496	35 (1.2)	33 (1.1)	33 (1.2)	11.6 (0.1)
Hispanic						
Prison	208	132	61 (3.3)	23 (2.7)	16 (1.7)	9.6 (0.2)
Household	2,731	17,047	46 (1.2)	26 (1.1)	28 (1.1)	10.2 (0.1)

n = sample size; WGT N = population size estimate /1,000 (the sample sizes for subpopulations may not add up to the total sample sizes because of missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Survey, 1992.

prison population compared with the household population and in general tend to have less education than White adults, even within racial/ethnic groups prisoners have less education on average than their racial/ethnic counterparts in the household population.

Much of the difference in performance between those in prison and those in the household population disappears when racial or ethnic background and educational attainment are accounted for (table 2.7). In fact, White, Black, and Hispanic inmates without a high school diploma or GED perform, on average, better than their counterparts in the household population. The proficiency of White inmates without a high school diploma is 15 points higher than that of corresponding White adults in the household population on the prose scale, 23 points higher on the document scale, and 10 points higher on the quantitative scale. The proficiency scores of Black prisoners who had not finished high school are 30 points higher than those of Black householders with the same educational background on the prose, document, and quantitative scales. The scores of Hispanic inmates without a diploma are 25 points higher than those of Hispanic householders who had not completed high school on both the prose and quantitative scales, and 13 points higher on the document scale, although this difference does not reach statistical significance.

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White and Black prisoners who have received a high school diploma or a GED demonstrate about the same literacy proficiency as their counterparts in the household population with the same level of education. The proficiency scores for both White prisoners and householders with a high school diploma or GED average about 275 on the prose, document, and quantitative scales. The proficiencies for Black prisoners and householders with a high school education range between 233 and 242 on the document and quantitative scales, with statistically insignificant differences between the two groups. On the prose scale, however, Black prisoners with a high school education perform, on average, 13 points higher than their household counterparts, a difference that is statistically significant. (It is not possible to compare the Hispanic inmates with the Hispanic householders as the inmate sample size is not large enough to make reliable estimates.)

White inmates with any postsecondary education do not perform as well as White householders on the prose and quantitative scales, while on the document scale White inmates and householders with postsecondary education perform about the same (around 305). Black inmates with educational experience beyond high school perform about the same on all three scales as Black householders with the same educational experience. (Once again, the Hispanic inmate sample size is not large enough to make reliable estimates; therefore, a comparison can not be made with the household population.)

Thus, when compared by racial/ethnic background and educational experience, the performance of prisoners with less than a high school education is better than that of householders, while the performance of prisoners with a high school diploma or more is generally similar to or, in a few instances, lower than that of householders. The low literacy proficiencies of the total prison population in comparison with the total household population are primarily due to the large proportion of minority racial/ethnic groups and persons with lower levels of education in the prison population. When these variables are taken into account, prisoners score the same or better than their racial or ethnic counterparts in the household population. One notable pattern, however, is that for both prisoners and householders, differences remain among the racial/ethnic groups. White adults at each educational level perform better than Black and Hispanic adults on all three scales, and Black adults perform better than Hispanic adults.

TABLE 2.7

Average Proficiencies on Each Literacy Scale of Prison and Household Populations, by Race/Ethnicity and by Level of Education

LITERACY SCALES BY RACE/ETHNICITY BY POPULATIONS			LEVEL OF EDUCATION		
			0 to 12 years	High school/GED	Postsecondary
	n	WGT N (/1,000)	PROF (SE)	PROF (SE)	PROF (SE)
Prose					
White					
Prison	417	266	242 (4.0)	276 (4.7)	304 (5.1)
Household	16,298	139,011	227 (1.7)	278 (1.1)	317 (0.9)
Black					
Prison	479	339	223 (3.2)	255 (4.0)	283 (6.5)
Household	4,252	19,496	193 (2.7)	242 (1.6)	275 (1.7)
Hispanic					
Prison	208	132	186 (5.9)	*** (****)	*** (****)
Household	2,731	17,047	161 (3.4)	241 (3.8)	275 (3.0)
Document					
White					
Prison	417	266	243 (3.9)	276 (5.2)	303 (3.8)
Household	16,298	139,011	220 (2.0)	271 (1.1)	310 (0.8)
Black					
Prison	479	339	216 (4.3)	242 (4.0)	267 (4.8)
Household	4,252	19,496	186 (2.2)	235 (1.5)	267 (1.9)
Hispanic					
Prison	208	132	171 (7.1)	*** (****)	*** (****)
Household	2,731	17,047	158 (3.7)	241 (4.3)	274 (2.8)
Quantitative					
White					
Prison	417	266	234 (4.6)	275 (4.5)	304 (4.9)
Household	16,298	139,011	224 (2.1)	279 (1.1)	318 (0.9)
Black					
Prison	479	339	206 (6.1)	238 (6.7)	257 (5.3)
Household	4,252	19,496	176 (2.6)	233 (1.9)	266 (1.9)
Hispanic					
Prison	208	132	180 (8.2)	*** (****)	*** (****)
Household	2,731	17,047	155 (3.4)	240 (4.2)	276 (3.0)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

Results by Sex

Male and female prisoners demonstrate about the same average proficiencies on the literacy scales (table 2.8). They average about 250 on the prose scale, 240 on the document scale, and 235 on the quantitative scale. In contrast, in the household population men perform slightly better than women on the document and quantitative scales. About the same percentage of male and female inmates perform in each level on each of the scales, with over 60 percent of each group performing in Levels 1 and 2.

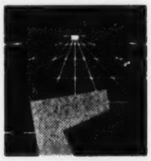


TABLE 2.8

Percentages at Each Level and Average Proficiencies on Each Literacy Scale of Prison and Household Populations, by Sex

LITERACY SCALES BY SEX BY POPULATIONS			LEVELS AND AVERAGE PROFICIENCY					
			Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average proficiency
	n	WGT N (/1,000)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Prose								
Male								
Prison	1,076	723	31 (1.7)	37 (2.0)	25 (1.7)	6 (0.7)	0† (0.3)	246 (1.9)
Household	10,694	91,376	22 (0.6)	26 (0.9)	31 (1.2)	18 (0.6)	4 (0.3)	272 (0.9)
Female								
Prison	71	43	27 (6.7)	35 (3.5)	33 (6.5)	5 (5.1)	0† (0.0)	252 (7.6)
Household	14,208	98,858	20 (0.5)	28 (0.7)	33 (0.7)	17 (0.5)	3 (0.2)	273 (0.8)
Document								
Male								
Prison	1,076	723	33 (2.2)	38 (2.2)	25 (1.5)	4 (1.0)	0† (0.2)	240 (2.2)
Household	10,694	91,376	23 (0.6)	26 (0.5)	31 (0.8)	17 (0.5)	3 (0.3)	269 (0.9)
Female								
Prison	71	43	32 (6.8)	38 (6.8)	25 (8.1)	5 (2.2)	0† (0.0)	244 (9.2)
Household	14,208	98,858	23 (0.6)	30 (0.7)	31 (0.6)	14 (0.5)	2 (0.2)	265 (0.9)
Quantitative								
Male								
Prison	1,076	723	40 (1.9)	32 (2.3)	22 (2.0)	6 (1.1)	1 (0.4)	236 (3.1)
Household	10,694	91,376	21 (0.7)	23 (0.5)	31 (0.6)	20 (0.4)	5 (0.3)	277 (0.9)
Female								
Prison	71	43	43 (6.5)	32 (8.3)	21 (7.2)	4 (1.8)	1 (1.3)	234 (9.7)
Household	14,208	98,858	23 (0.5)	28 (0.9)	31 (1.0)	15 (0.6)	3 (0.3)	266 (0.9)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

† Percentages less than 0.5 are rounded to 0.

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

Male prisoners demonstrate lower literacy proficiencies than males in the household population on all three scales. Furthermore, about 68 percent of male prisoners, compared with 48 percent of males in the household population, are in Levels 1 and 2 on the prose scale. Seven in 10 male prisoners and 5 in 10 male householders perform in the two lowest levels of the document scale. Almost three-quarters of male prisoners and slightly under one-half of males in the household population are in Levels 1 and 2 on the quantitative scale.

Although higher percentages of female prisoners than females in the household population perform in Level 1 on the prose and document scales, the differences are not statistically significant. Because of the small number of women in prison, there were only a small number of women in the prison sample. The large standard errors of the female prison population reflect the variability due to sampling as well as to measurement errors. It is, therefore, often impossible to tell if observed differences are the result of sampling variability or a true difference. A significantly higher percentage of women prisoners than female householders are in Level 1, however, on the quantitative scale (43 percent vs. 23 percent). When average proficiency scores are compared, those of female prisoners are lower than those of female householders on all three scales.

Results by Age

On the prose and quantitative scales, prisoners perform about the same, on average, for all three age groups, 16 to 24, 25 to 34, and 35 and older (table 2.9). Although the prose proficiency of prisoners under 25 years of age is 252, it is not statistically different from that of prisoners 35 and older, who average 241. On the document scale, the proficiency scores of the two groups of prisoners under the age of 35 are significantly higher (251 and 243) than the scores of those who are 35 or older (230).

Clearly, prisoners demonstrate lower average proficiencies than householders in their age group on all three literacy scales. In addition, about two-thirds of prisoners younger than 25 years of age perform in Levels 1 and 2 on the prose scale, while less than half of householders are in those levels. An estimated 68 percent of prisoners age 25 to 34 perform in Levels 1 and 2 on the prose scale; 41 percent of the household population age 25 to 34 are in these levels on this scale. Almost 7 in 10 prisoners age 35 or older perform in the lowest two levels on the prose scale, while only 5 in 10 of the household population do. Patterns on the document and quantitative scales are similar to those on the prose scale.

TABLE 2.9

Percentages at Each Level and Average Proficiencies on Each Literacy Scale of Prison and Household Populations, by Age

LITERACY SCALES BY AGE BY POPULATIONS			LEVELS AND AVERAGE PROFICIENCY					
			Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average proficiency
	n	WGT N (/1,000)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Prose								
16 to 24								
Prison	281	174	26 (3.1)	42 (4.6)	25 (4.2)	5 (2.1)	0† (0.2)	252 (3.2)
Household	4,300	34,764	15 (0.9)	31 (1.4)	37 (1.4)	16 (1.1)	2 (0.3)	278 (1.0)
25 to 34								
Prison	474	316	31 (2.8)	37 (3.1)	26 (2.6)	5 (1.1)	0† (0.3)	247 (3.1)
Household	6,227	41,009	16 (0.7)	25 (1.0)	34 (0.8)	21 (1.0)	4 (0.4)	283 (1.3)
35 and older								
Prison	389	273	35 (3.2)	34 (2.8)	25 (2.2)	6 (1.8)	1 (0.5)	241 (3.5)
Household	14,408	114,712	24 (0.5)	26 (0.7)	30 (0.8)	16 (0.5)	3 (0.3)	267 (0.8)
Document								
16 to 24								
Prison	281	174	27 (3.2)	41 (5.1)	27 (4.4)	5 (2.0)	0† (0.2)	251 (3.4)
Household	4,300	34,764	14 (0.7)	30 (1.2)	38 (1.5)	16 (1.2)	2 (0.3)	279 (1.1)
25 to 34								
Prison	474	316	32 (3.0)	37 (3.5)	26 (2.9)	4 (1.2)	0† (0.2)	243 (3.4)
Household	6,227	41,009	16 (0.7)	25 (0.7)	35 (0.8)	21 (0.9)	4 (0.3)	281 (1.2)
35 and older								
Prison	389	273	38 (3.7)	36 (2.8)	22 (3.0)	5 (1.4)	0† (0.3)	230 (4.2)
Household	14,408	114,712	28 (0.7)	29 (0.6)	27 (0.5)	13 (0.6)	2 (0.2)	258 (1.0)
Quantitative								
16 to 24								
Prison	281	174	40 (3.6)	33 (3.3)	22 (4.4)	5 (1.4)	1 (1.2)	240 (4.3)
Household	4,300	34,764	17 (0.9)	30 (1.1)	36 (1.0)	15 (0.9)	2 (0.4)	275 (1.1)
25 to 34								
Prison	474	316	39 (2.9)	33 (3.7)	21 (2.5)	6 (1.2)	1 (0.4)	237 (3.5)
Household	6,227	41,009	17 (0.7)	24 (0.7)	34 (0.8)	20 (0.8)	5 (0.5)	282 (1.1)
35 and older								
Prison	389	273	41 (3.9)	30 (3.7)	22 (2.8)	6 (1.7)	1 (0.6)	231 (5.2)
Household	14,408	114,712	25 (0.7)	24 (0.7)	29 (0.7)	17 (0.5)	4 (0.3)	267 (1.0)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

† Percentages less than 0.5 are rounded to 0.

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

Disabilities

Both prisoners and householders responded to a series of questions asking them whether they had any disabilities. Table 2.10 shows the percentages in each population reporting whether or not they had any disabilities and their proficiency scores on the three scales. A significantly higher percentage of the prison population (36 percent) than the household population (26 percent) reported having at least one disability. (The higher reported incidence of disabilities may be due, in part, to prisoners being more aware of disabilities than householders because of having been evaluated by the criminal justice system.) Furthermore, the proficiency scores of those in the prison population who reported any disabilities are significantly lower than the scores of their household counterparts, except on the document scale.

TABLE 2.10

Percentages and Average Proficiencies on Each Literacy Scale of Prison and Household Populations, by Disability

NUMBER OF DISABILITIES BY POPULATIONS			LITERACY SCALES		
			Prose	Document	Quantitative
	n	WGT N (/1,000)	CPCT (SE) PROF (SE)	CPCT (SE) PROF (SE)	CPCT (SE) PROF (SE)
No Disability					
Prison	1,136	766	63 (1.7) 253 (2.3)	63 (1.7) 247 (2.7)	63 (1.7) 244 (3.7)
Household	24,832	190,524	74 (0.5) 283 (0.6)	74 (0.5) 278 (0.6)	74 (0.5) 283 (0.7)
One or More Disabilities					
Prison	1,136	766	36 (1.6) 233 (3.9)	36 (1.6) 227 (4.6)	36 (1.6) 220 (5.0)
Household	24,832	190,524	26 (0.5) 243 (1.3)	26 (0.5) 235 (1.4)	26 (0.5) 239 (1.6)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); CPCT = column percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

Table 2.11 shows the percentages of each population reporting various disabilities and the average proficiency scores on each scale associated with each disability. (The column percentages add up to more than 100 percent because respondents could report more than one disability.) Significantly more inmates than householders reported having a learning disability or a mental or emotional condition. Almost four times as many inmates as householders reported a learning disability and three times as many report a mental or emotional condition. While there are no significant differences on the three scales between the proficiency scores of inmates and householders with a mental or emotional condition, there are for a learning disability, with the inmates attaining significantly lower scores. The difference is particularly pronounced on the quantitative scale where inmates' proficiency is over 30 points lower than that of householders. Proficiency scores for inmates reporting a learning disability are significantly lower on all three scales than the scores of inmates with all other disabilities except visual impairment. With the exception of those with a learning disability, inmates with particular disabilities do not demonstrate lower literacy skills than their counterparts in the household population with the same disabilities.

Regression Analyses

Of particular concern when comparing the prison and the household populations is the difference in demographic composition of the two populations. As noted earlier, the prison population has greater proportions of males, minorities, younger adults, and adults with lower levels of education. In addition, when the two populations are compared by some of these characteristics, such as educational attainment and race/ethnicity, the prison population demonstrates proficiencies that are comparable to or higher than those of the household population. Thus, in order to account for the differences in the demographic composition of the two populations, regression analyses were run in which the variables of sex, race/ethnicity, age, and level of education were held constant, with the outcome being proficiency on each of the three scales.

The results of the regression for performance on the three scales are presented in table 2.12. For the variable of race/ethnicity, the category of other includes American Indian, Alaskan Native, Asian, Pacific Islander, and other. Age was entered as a continuous variable, that is, the actual age of the respondent. Education was entered as a scale variable with the following breakdowns: 0 to 8 years, 9 to 12 years, GED certificate, high school diploma, some college education, and college degree.

TABLE 2.11

Percentages and Average Proficiencies on Each Literacy Scale of Prison and Household Populations, by Various Disabilities

DISABILITIES BY POPULATIONS			LITERACY SCALES		
			Prose	Document	Quantitative
	n	WGT N (/1,000)	CPCT (SE) PROF (SE)	CPCT (SE) PROF (SE)	CPCT (SE) PROF (SE)
No Disability					
Prison	1,136	766	63 (1.7) 253 (2.3)	63 (1.7) 247 (2.7)	63 (1.7) 244 (3.7)
Household	24,832	190,524	74 (0.5) 283 (0.6)	74 (0.5) 278 (0.6)	74 (0.5) 283 (0.7)
General Condition					
Prison	1,136	766	14 (1.3) 230 (5.1)	14 (1.3) 225 (6.2)	14 (1.3) 215 (6.4)
Household	24,832	190,524	12 (0.3) 227 (1.6)	12 (0.3) 219 (1.9)	12 (0.3) 220 (2.4)
Visual Impairment					
Prison	1,136	766	7 (0.7) 210 (8.3)	7 (0.7) 207 (9.7)	7 (0.7) 195 (8.9)
Household	24,832	190,524	7 (0.2) 217 (2.4)	7 (0.2) 212 (2.6)	7 (0.2) 210 (2.7)
Hearing Impairment					
Prison	1,136	766	6 (0.6) 225 (9.0)	6 (0.6) 238 (10.2)	6 (0.6) 225 (10.4)
Household	24,832	190,524	7 (0.3) 243 (2.6)	7 (0.3) 236 (2.8)	7 (0.3) 242 (3.6)
Learning Disability					
Prison	1,136	766	11 (1.0) 189 (6.2)	11 (1.0) 183 (6.9)	11 (1.0) 166 (8.2)
Household	24,832	190,524	3 (0.1) 207 (3.8)	3 (0.1) 201 (4.1)	3 (0.1) 198 (4.3)
Mental/Emotional					
Prison	1,136	766	6 (0.9) 228 (8.5)	6 (0.9) 229 (8.7)	6 (0.9) 212 (9.6)
Household	24,832	190,524	2 (0.1) 225 (4.9)	2 (0.1) 223 (4.7)	2 (0.1) 214 (5.8)
Physical Disability					
Prison	1,136	766	9 (1.0) 244 (7.4)	9 (1.0) 238 (9.2)	9 (1.0) 233 (8.8)
Household	24,832	190,524	9 (0.3) 231 (1.8)	9 (0.3) 222 (2.1)	9 (0.3) 223 (2.4)
Long-Term Disability					
Prison	1,136	766	8 (0.9) 237 (7.2)	8 (0.9) 229 (8.9)	8 (0.9) 225 (10.8)
Household	24,832	190,524	8 (0.2) 236 (2.4)	8 (0.2) 225 (2.3)	8 (0.2) 227 (2.7)
Other Disability					
Prison	1,136	766	6 (0.8) 239 (8.4)	6 (0.8) 226 (10.3)	6 (0.8) 226 (11.1)
Household	24,832	190,524	6 (0.3) 237 (2.6)	6 (0.3) 226 (2.4)	6 (0.3) 232 (3.2)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); CPCT = column percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

Table 2.12

Results of Multiple Regression Analyses

SCALE AND INDEPENDENT VARIABLES*	Average (Regression Coefficient)	Adjusted Standard Error	T Statistic	Probability
Prose				
Intercept	221.4	2.3	96.3	0.000
Female	5.1	1.0	5.2	0.000
Black	-39.3	1.6	-25.2	0.000
Hispanic	-54.4	1.5	-35.3	0.000
Other	-46.9	2.6	-18.0	0.000
Age	-0.7	0.0	-24.7	0.000
Education	22.3	0.3	65.4	0.000
Prison	10.3	6.7	1.6	0.121
Multiple Correlation	0.714			
Document				
Intercept	234.3	2.2	104.7	0.000
Female	0.2	0.9	0.3	0.792
Black	-41.5	1.5	-28.5	0.000
Hispanic	-53.0	1.6	-32.4	0.000
Other	-39.4	2.8	-13.9	0.000
Age	-1.0	0.0	-34.8	0.000
Education	21.3	0.3	65.4	0.000
Prison	4.8	6.6	0.7	0.465
Multiple Correlation	0.717			
Quantitative				
Intercept	223.2	2.1	103.1	0.000
Female	-7.2	1.0	-7.4	0.000
Black	-50.6	1.7	-30.7	0.000
Hispanic	-56.5	1.9	-29.2	0.000
Other	-38.5	2.9	-13.4	0.000
Age	-0.7	0.0	-21.4	0.000
Education	23.2	0.3	75.7	0.000
Prison	0.9	7.3	0.1	0.907
Multiple Correlation	0.702			

*Female, Black, Hispanic, other, and prison are 1 degree of freedom contrasts. Males, White, and household are the comparison groups.

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Survey, 1992.

When the variables are held constant, there is no significant statistical difference in performance on all three scales between the prison and the household populations. The characteristic having the most effect on performance is level of education, followed by race/ethnicity. Thus, when comparisons are made between the prison and household populations, it is important to remember that differences in overall performance are most likely attributable to differences in the demographic composition of the two populations. On the other hand, the differences in demographics are important and should not minimize the significance of the overall low performance of the prison population, which comprises many individuals who demonstrate the need for improved literacy skills.

Summary

The demographic composition and educational attainment of the prison population differ significantly from that of the household population, with the prison population more likely to be male, minority, young, and less educated. Demonstrated performance on the three literacy scales also differs significantly. The proficiency scores of the total prison population are some 27 points lower than those of the household population on the prose and document scales, and 35 points lower on the quantitative scale. This lower performance among inmates is also evident when the percentages of the two populations performing in each of the levels are compared. Significantly more inmates than householders perform in Levels 1 and 2. At the two higher levels, the trend is reversed: significantly more householders than inmates perform in Levels 4 and 5.

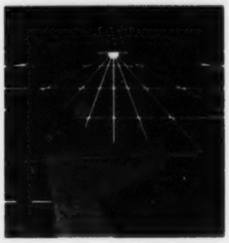
When the literacy survey results are compared for individuals with varying levels of education, a strong relationship between education and literacy is apparent. Both inmates and householders who had earned high school diplomas demonstrate significantly higher average prose, document, and quantitative proficiencies than do those who did not complete high school, and individuals who had completed at least some college perform better, on average, than those with high school diplomas. When the prison and household populations are compared by level of education, however, there are some differences in performance. The proficiency scores of prisoners who have a high school diploma are significantly lower on all three scales than the proficiencies of householders with a high school diploma. On the other hand, inmates with a GED demonstrate about the same proficiencies as householders with a GED.

Differences in performance are also evident across the racial/ethnic groups studied within the prison population and when the groups are compared across the prison and household populations. The average prose, document, and quantitative proficiencies of White inmates are significantly higher than those of Black, and the proficiencies of Black inmates are significantly higher than those of Hispanic inmates. When racial/ethnic groups are compared across the prison and household populations, the proficiency scores of White inmates are significantly lower on all three scales than those of White householders. Black and Hispanic inmates, however, demonstrate about the same proficiencies as their counterparts in the household population.

The differences in performance between the prison and household populations may be explained in part by differences in educational attainment and racial/ethnic composition. When compared by these two variables, inmates' literacy proficiencies are similar to or better than those of the householders. Thus, the lower literacy proficiencies of the total prison population in comparison with the household population may be related to the larger proportion of inmates from minority racial/ethnic groups and of inmates with lower levels of education. It is important to note, however, that these data do not imply that all minority group members score at the lower levels on all three scales or that the cause for lower performance is to be explained by the race/ethnicity variable.

No differences in proficiencies are apparent between male and female inmates. When compared with the household population, both male and female prisoners demonstrate lower proficiencies than their counterparts on all three scales. Similarly, inmates in all three age groups demonstrate about the same proficiencies on the prose and quantitative scales, but inmates under age 35 demonstrate higher document proficiency than those 35 and older. When inmates within an age group are compared with their counterparts in the household population, inmates demonstrate lower proficiencies.

Significantly more inmates than householders reported having at least one disability, with a greater percentage of inmates than householders reporting a learning disability or a mental or emotional condition. The proficiency scores of inmates with a learning disability are significantly lower than those of the householders reporting a similar disability.



CHAPTER 3

Experiences Before Prison

The personal histories of all adults have much to tell us about the influence of environmental factors upon the chances of success and failure in later life. The detailed information collected on prisoners in this and other surveys — such as those conducted by the Bureau of Justice Statistics — can help illuminate the paths connecting background experiences with literacy proficiency. Among the most important factors to consider in examining such connections are educational experiences, home environment, and occupation and income before incarceration.

Educational Experiences

As noted in Chapter 2, a greater percentage of the prison population have lower levels of education compared with the household population. This explains, in part, the differences in literacy proficiency across the three scales. As is true for previous ETS adult literacy assessments, educational attainment is the strongest predictor of literacy proficiency: the more formal education one has, the higher one tends to perform on all three scales. Another facet of educational experiences that will be looked at in relation to literacy proficiency is the reason given by prisoners for dropping out of school.

Educational Attainment

As indicated in table 3.1, about one-half of the prisoners have not achieved their high school diplomas, with the largest percentage (35 percent) having completed 9 to 12 years of formal schooling. About the same percentage of inmates received a high school diploma (14 percent) or GED (17 percent). One-fifth of the inmates have some postsecondary education.

In general, the higher the educational attainment the higher the average proficiency on the three scales. Those with 9 to 12 years of education outperform those with 0 to 8 years of schooling by about 35 points, on average,

TABLE 3.1

Percentages and Average Proficiencies on Each Literacy Scale of Inmates, by Level of Education and Reason for Dropping Out of School

LEVEL OF EDUCATION AND DROPOUT REASON	LITERACY SCALES				
			Prose	Document	Quantitative
	n	WGT N (/1,000)	CPCT (SE) PROF (SE)	CPCT (SE) PROF (SE)	CPCT (SE) PROF (SE)
Total Population					
Total	1,143	763	100 (0.0)	100 (0.0)	100 (0.0)
			246 (1.9)	241 (2.2)	236 (3.0)
Level of Education					
0 to 8 years	157	107	14 (0.1)	14 (0.1)	14 (0.1)
			196 (5.0)	176 (6.1)	182 (8.4)
9 to 12 years	385	271	35 (1.1)	35 (1.1)	35 (1.1)
			230 (3.0)	230 (2.8)	219 (3.5)
High school diploma	154	107	14 (1.1)	14 (1.1)	14 (1.1)
			255 (5.0)	251 (5.6)	244 (6.7)
GED	183	130	17 (1.0)	17 (1.0)	17 (1.0)
			270 (4.3)	263 (4.3)	263 (4.6)
Postsecondary	264	149	20 (0.7)	20 (0.7)	20 (0.7)
			285 (3.7)	279 (3.0)	276 (3.4)
Dropout Reason					
Financial	69	50	10 (1.2)	10 (1.2)	10 (1.2)
			212 (8.2)	193 (9.2)	203 (10.3)
Work/Military	134	97	19 (2.0)	19 (2.0)	19 (2.0)
			230 (5.2)	233 (6.3)	232 (7.8)
Lost interest, academic problems	236	164	33 (2.1)	33 (2.1)	33 (2.1)
			239 (3.4)	233 (4.3)	226 (5.0)
Family problems	98	68	14 (1.3)	14 (1.3)	14 (1.3)
			231 (6.0)	226 (8.2)	214 (6.7)
Convicted	99	70	14 (1.4)	14 (1.4)	14 (1.4)
			249 (4.5)	237 (5.0)	235 (6.9)
Other, including pregnancy	81	52	10 (1.3)	10 (1.3)	10 (1.3)
			225 (6.7)	223 (7.2)	208 (8.4)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); CPCT = column percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

on the prose and quantitative scales and by almost 55 points, on average, on the document scale. Prisoners who have completed a high school diploma and GED attain higher average proficiency scores on all three scales compared with those with 9 to 12 years of schooling. Inmates with a GED demonstrate about the same proficiencies as inmates with a high school diploma. Prisoners with at least some postsecondary education outperform those with a high school diploma on all three scales but outperform inmates with a GED only on the document scale.

Reason for Dropping Out of School

Those inmates who reported that they had left school before receiving a high school diploma or who reported receiving a GED were asked for the main reason they stopped their schooling when they did. The options that were available were those used in the NAEP young adult literacy survey. (See appendix D for a full description of the options.) As also shown in table 3.1, the most prevalent reason given by prisoners (in about one-third of the cases) for dropping out of school was loss of interest or academic difficulty. The average proficiency scores of prisoners citing this reason, as well as of those who dropped out because they were convicted of a crime, are significantly higher on the prose and document scales than the scores of the 10 percent who reported dropping out for financial reasons. No significant differences in quantitative literacy are found when comparing these same groups.

Home Environment

Several questions were asked about the inmate's home background. Two influences — level of parental education and language spoken in the home while growing up — are discussed below.

Level of Parental Education

Previous work investigating the intergenerational nature of literacy has revealed the major role that parents' educational attainment plays in their children's success in school. The results of other literacy assessments have demonstrated that the educational attainment of parents acts as a significant predictor of an individual's literacy performance.[1] Accordingly, both inmates and householders were asked to indicate the highest level of education that each of their parents had completed, and the highest level of education attained by either parent was used as the parental education level.

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[1] I.S. Kirsch and A. Jungeblut. (September 1992). *Profiling the Literacy Proficiencies of JTPA and ES/UI Populations: Final Report to the Department of Labor.* Princeton, NJ: Educational Testing Service. I.S. Kirsch and A. Jungeblut. (1986). *Literacy: Profiles of America's Young Adults.* Princeton, NJ: Educational Testing Service.

The prison population differs from the household in that a greater percentage of prisoners than householders attained lower levels of education than their parents — 39 compared with 21 percent (table 3.2). On the other hand, a lower percentage of prisoners than householders attained higher levels of education than their parents — 30 and 43 percent, respectively. As can be seen in table 3.3, a greater percentage of prisoners than their parents have less than a high school diploma — 49 and 36 percent, respectively. In contrast, a lower percentage of householders than their parents have less than a high school diploma — 24 and 32 percent, respectively.

Not only do prisoners attain lower levels of education than their parents overall, but a greater percentage of prisoners' parents attained lower levels of

TABLE 3.2

Percentages of Inmates and Householders Reporting Lower, Equal, and Higher Levels of Education Than Their Parents

POPULATION			COMPARISON		
			Lower than parents	Same as parents	Higher than parents
	n	WGT N (/1,000)	RPCT (SE)	RPCT (SE)	RPCT (SE)
Inmates	885	581	39 (1.5)	31 (1.5)	30 (1.5)
Householders	21,719	163,141	21 (0.4)	35 (0.4)	43 (0.4)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

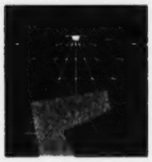

TABLE 3.3

Percentages of Inmates and Householders Reporting Personal Education Level and Parental Education Level

EDUCATION LEVEL	POPULATION			
	Inmates	Inmates' parents	Householders	Householders' parents
	CPCT (SE)	CPCT (SE)	CPCT (SE)	CPCT (SE)
0 to 12 years	49 (1.1)	36 (1.5)	24 (0.2)	32 (0.5)
H.S. diploma or GED	31 (1.0)	39 (1.6)	32 (0.1)	32 (0.4)
Postsecondary	20 (0.7)	25 (1.4)	44 (0.2)	36 (0.4)

CPCT = column percentage estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

education than householders' parents. Thirty-six percent of prisoners' parents have less than a high school diploma, compared with 32 percent of householders' parents. On the other hand, 25 percent of prisoners' parents have any college education, compared with 36 percent of householders' parents.

The association of higher literacy proficiency with increased level of parental education is evident from table 3.4. The connection between higher proficiency scores and higher levels of parental education is not quite as strong, however, for the prison population as it is for the household population. For both the prison and household populations, those whose parents had 9 to 12 years of education attain higher scores on all three scales than those whose parents had 0 to 8 years of education. While for the household population, the scores of those whose parents had a high school diploma or GED are significantly higher than the scores of those whose parents had 9 to 12 years on all three scales, this is true for the prison population only on the document scale. For the prison population, the proficiencies of those whose parents had at least some postsecondary education are higher on the prose and document scales than the proficiencies of those whose parents had a high school diploma or GED; for the household population, the proficiencies are higher for the postsecondary level on all three scales.

TABLE 3.4

Average Proficiencies on Each Literacy Scale of Prison and Household Populations, by Level of Parental Education

PARENTAL EDUCATION LEVEL BY POPULATIONS			LITERACY SCALES		
			Prose	Document	Quantitative
	n	WGT N (/1,000)	PROF (SE)	PROF (SE)	PROF (SE)
0 to 8 Years					
Prison	179	120	222 (5.4)	211 (5.9)	211 (6.9)
Household	4,727	38,429	233 (1.5)	225 (1.6)	233 (1.7)
9 to 12 Years					
Prison	131	90	250 (4.7)	242 (4.8)	237 (7.1)
Household	2,253	16,417	264 (1.7)	258 (1.7)	264 (2.0)
High School/GED					
Prison	342	226	259 (2.2)	256 (2.8)	249 (3.4)
Household	7,491	55,289	283 (0.8)	279 (0.8)	284 (0.9)
Postsecondary					
Prison	236	147	271 (3.7)	270 (3.6)	261 (4.5)
Household	8,226	61,469	307 (0.8)	303 (0.8)	305 (1.1)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

By level of parental education, the household population demonstrates higher proficiency than does the prison population. For example, as shown in table 3.4, the proficiencies of householders whose parents have a high school diploma or GED are 23 to 35 points higher on the three scales than the proficiencies of prisoners whose parents have the same level of education — 24 points higher on the prose scale, 23 points higher on the document, and 35 on the quantitative. Such differences may be attributable, in part, to the tendency of the inmate population to have lower levels of education than both their parents and householders. In some cases when the level of education for inmates, householders, and parents is the same, such differences disappear. Table 3.5 shows the average proficiencies across the three scales for prisoners and householders who have the same level of education as each other and as their parents. Thus, for prisoners and householders whose parents had 0 to

TABLE 3.5

Average Proficiencies on Each Literacy Scale of Inmates and Householders Reporting Same Level of Education as Their Parents

EDUCATION LEVEL BY POPULATIONS			LITERACY SCALES		
			Prose	Document	Quantitative
	n	WGT N (/1,000)	PROF (SE)	PROF (SE)	PROF (SE)
0 to 12 Years					
Inmates	158	111	210 (4.8)	199 (5.8)	198 (7.1)
Householders	2,435	21,056	200 (1.9)	194 (2.2)	197 (2.4)
H.S. Diploma/GED					
Inmates	120	83	267 (3.4)	262 (4.7)	257 (5.5)
Householders	2,593	21,440	275 (1.5)	271 (1.5)	277 (1.6)
Postsecondary					
Inmates	98	54	299 (6.9)	292 (6.1)	285 (7.5)
Householders	5,972	39,974	322 (1.0)	317 (0.9)	320 (1.3)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

12 years of education and who themselves have 0 to 12 years, the proficiencies of prisoners and householders are about the same on all three scales. The same is true for prisoners and householders with a high school diploma or GED for the document scale.

Language Background

Inmates were asked several questions about their language background. Among them, they were to indicate the language or languages that were usually spoken in their home when they were growing up. As shown in table 3.6, 80 percent of the inmates grew up in homes where English only was spoken, while about 9 percent grew up in homes where English and another language were spoken and 11 percent in homes where only a language other than English was spoken. The relationship of language in the homes of prisoners to literacy proficiency is clear. Those who lived in English-only or English-bilingual households attain similar proficiency scores but outperform by 65 to

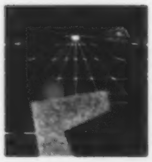

TABLE 3.6

Percentages and Average Proficiencies on Each Literacy Scale of Inmates, by Language Spoken in the Home

LANGUAGE	n	WGT N (/1,000)	Prose CPCT (SE) PROF (SE)	Document CPCT (SE) PROF (SE)	Quantitative CPCT (SE) PROF (SE)
English	907	616	80 (0.9) 253 (2.2)	80 (0.9) 248 (2.5)	80 (0.9) 242 (3.2)
English and other	112	68	9 (0.9) 259 (4.4)	9 (0.9) 256 (5.5)	9 (0.9) 245 (5.6)
Other	127	81	11 (0.7) 180 (6.6)	11 (0.7) 165 (6.7)	11 (0.7) 178 (8.5)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); CPCT = column percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

90 points those who grew up in homes where English was not spoken. For example, on the prose scale those who grew up in homes where English only or English and another language were spoken average about 255, whereas those from non-English speaking homes average 180. These inmates' average proficiencies on all three scales indicate that they demonstrate skills associated with only the most rudimentary tasks.

Occupation and Income

The employment histories of prisoners may refute the popular conception that a life of crime is an occupation in itself. Two-thirds of prisoners reported in the Bureau of Justice Statistics survey that they were working in the month prior to being arrested for their current offense.[2] For the National Adult Literacy Survey, inmates who had been admitted to prison after December 1988 were asked if they had been working and, if so, what their occupation was. As shown in table 3.7, the vast majority (85 percent) of prisoners who were working prior

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[2] A. Beck, et al. (March 1993). *Survey of State Prison Inmates, 1991.* Washington, DC: U.S. Department of Justice, p. 3.

TABLE 3.7

Percentages and Average Proficiencies on Each Literacy Scale of Inmates, by Occupation Category and Income Before Incarceration

OCCUPATION AND INCOME			LITERACY SCALES		
			Prose	Document	Quantitative
	n	WGT N (/1,000)	CPCT (SE) PROF (SE)	CPCT (SE) PROF (SE)	CPCT (SE) PROF (SE)
Total Population					
Total	661	435	100 (0.0) 248 (2.5)	100 (0.0) 246 (3.2)	100 (0.0) 240 (4.0)
Occupation Category					
Professional	34	20	4 (0.7) *** (****)	4 (0.7) *** (****)	4 (0.7) *** (****)
Sales or administrative support	74	44	10 (1.4) 263 (9.0)!	10 (1.4) 260 (11.7)!	10 (1.4) 258 (12.3)!
Craft or service	288	191	44 (2.3) 251 (4.2)	44 (2.3) 249 (4.3)	44 (2.3) 244 (5.6)
Assemblers, laborers, farm, or transportation	264	180	41 (2.1) 239 (3.9)	41 (2.1) 237 (4.5)	41 (2.1) 226 (5.9)
Monthly Income					
$0 to $499	143	94	22 (2.0) 241 (5.0)	22 (2.0) 242 (5.2)	22 (2.0) 227 (6.3)
$500 to $999	202	134	31 (2.2) 241 (5.5)	31 (2.2) 238 (6.0)	31 (2.2) 232 (6.8)
$1,000 to $1,499	159	106	25 (1.9) 254 (4.7)	25 (1.9) 251 (6.0)	25 (1.9) 249 (7.1)
$1,500 or more	147	95	22 (1.8) 262 (5.3)	22 (1.8) 258 (5.9)	22 (1.8) 255 (5.8)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); CPCT = column percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

to incarceration held jobs in craft, service, assembly, labor, or transportation categories. Prisoners who held jobs in sales or administrative support demonstrate higher proficiency than those who held jobs in assembly, labor, farm, or transportation occupations only on the prose scale. Inmates in each category perform, on average, in Level 2 on the literacy scales.

Prisoners who had been admitted after December 1988 were also asked what their average monthly earnings were for the job they held. About half of the prisoners reported earning less than $1,000 per month or $12,000 a year (table 3.7). The proficiency scores of those who reported earning $1,500 per month or more are significantly higher on both the prose and quantitative scales than the scores of those who reported less than $1,000. The differences in document proficiency are not significant between any of the income groups.

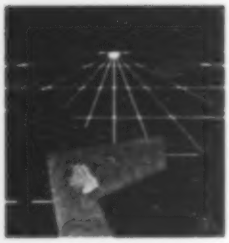
Summary

The National Adult Literacy Survey results reveal that certain background factors are related to literacy proficiency. Generally the higher the level of education, the higher the proficiency scores on the three scales. The most prevalent reason for dropping out of school was loss of interest or academic difficulty. Inmates who left school for this reason demonstrate higher proficiencies than inmates who dropped out of school for financial reasons.

Level of parental education has a similar relationship to proficiency as does the inmates' own level of education: generally, the higher the level of parental education, the higher the inmates' proficiencies. The effects of low levels of parental education can be compensated for, however, if individuals attain higher levels of education than their parents. Prisoners, however, are relatively disadvantaged in that they attain lower levels of education than their parents and their parents have attained less formal education than is typical of parents in the household population.

When inmates come from homes where only a non-English language was spoken, their literacy proficiencies are significantly lower than those who come from homes where English was spoken.

The relationship of two other factors — occupation and income — to literacy was also explored. Few inmates held professional jobs before incarceration. The only significant difference in proficiency occurs on the prose scale where those in sales and administrative support are compared with those in the assembly, labor, farm, or transportation occupations. The proficiencies of inmates are not significantly different when compared by other occupational categories. Inmates who earned $1,500 or more per month demonstrated higher prose and quantitative proficiencies than those who earned less than $1,000 per month.



CHAPTER 4

Experiences Unique to Prison Life

Popular conceptions of life behind prison walls may be highly influenced by the extent to which prisons are seen as places of punishment or rehabilitation. In either case, until recent studies, little has been known about how prisoners spend their time on a daily basis. Through information gathered from the National Adult Literacy Survey, the Bureau of Justice Statistics (BJS) survey of state prisoners, and the General Accounting Office (GAO) report on federal prisoners, a much clearer picture emerges of the diverse activities in which prisoners participate. Many of these activities in education and vocational training may have implications for reducing recidivism and preparing prisoners to rejoin the general population. Other activities — including participation in social organizations and work duties — provide possibilities for self-improvement. Such opportunities also provide specific contexts for the development and reinforcement of the types of literacy skills profiled in this survey. This chapter explores the relationship between literacy proficiency and prison experiences as well as type of offense and length of sentence.

The BJS 1991 survey of 13,986 prisoners (representing 711,000 prisoners in state correctional facilities) revealed that "nearly all inmates had participated in work, education, or other programs since their admission to prison".[1] Around 80 percent reported that they were currently participating in a program or activity. About half reported having received academic education and one-third, vocational training, since entering prison. The GAO survey of 2,925 federal prisoners (representative of around 65,000 federal prisoners in 1992) asked prisoners to rate factors accounting for their participation in education and vocational programs. Over 70 percent rated opportunity for self-improvement as the number one reason for their participation in educational programs.[2] The second most highly rated reason (at around 60 percent) was to obtain marketable skills. Two other reasons also highly rated by 40 to 50 percent of respondents were that participation in educational or vocational classes was a way to reduce chances of returning to prison and that such courses were a challenge. The reason for taking educational or vocational programs rated the least significant was bored/filled time (about 15 percent).

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[1] A. Beck, et al. (March 1993). *Survey of State Prison Inmates, 1991*. Washington, DC: US Department of Justice, p. 27.

[2] H.A. Valentine. (January 1993). *Federal Prisons: Inmate and Staff Views on Education and Work Training Programs*. Report to the Chairman, Select Committee on Narcotics Abuse and Control, House of Representatives, p. 9.

Literacy Proficiency by Type of Offense

Prisoners were asked to indicate for what offenses they were currently in prison. If they indicated more than one, they were asked for which offense they received the longest sentence, and that offense became the reported offense. As shown in table 4.1, the greatest percentage of inmates, 44 percent, reported that they were serving time for violent crimes, which include homicide, rape,

TABLE 4.1

Percentages and Average Proficiencies on Each Literacy Scale of Inmates, by Current Offense

CURRENT OFFENSE	LITERACY SCALES				
			Prose	Document	Quantitative
	n	WGT N (/1,000)	CPCT (SE) PROF (SE)	CPCT (SE) PROF (SE)	CPCT (SE) PROF (SE)
Total Population					
Total	1,106	738	100 (0.0) 246 (1.9)	100 (0.0) 240 (2.1)	100 (0.0) 236 (2.9)
Current Offense					
Violent	480	322	44 (1.9) 246 (3.1)	44 (1.9) 240 (3.4)	44 (1.9) 235 (4.7)
Property	202	133	18 (1.2) 259 (4.1)	18 (1.2) 256 (3.7)	18 (1.2) 246 (4.5)
Drugs	287	189	26 (1.5) 237 (4.9)	26 (1.5) 230 (5.9)	26 (1.5) 233 (6.6)
Public order	137	93	13 (1.1) 246 (4.3)	13 (1.1) 240 (5.4)	13 (1.1) 235 (6.0)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); CPCT = column percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

sexual assault, robbery, kidnapping, and assault. Those convicted of drug offenses make up the second largest group at 26 percent of the prison population, followed by property offenses (18 percent), which include such crimes as burglary, larceny, auto theft, fraud, embezzlement, arson, and stolen property. Those convicted of public order offenses, which include weapons offense, rioting, contempt of court, morals/decency offense, probation and parole violations, and minor traffic violations compose the smallest group, 13 percent. Drug offenders demonstrate lower prose and document proficiencies than property offenders, but about the same quantitative proficiency. Violent offenders also demonstrate lower proficiencies than property offenders on the document scale. The proficiencies of other types of offenders are not statistically different from one another.

Literacy and Length of Prison Sentence

As shown in table 4.2, over one-half of the prisoners were sentenced to prison for five years (60 months) or less, while 9 percent do not expect to be released. There are no significant differences in average proficiency scores of inmates when they are compared with respect to length of sentence, with the exception that the scores of those with a sentence of five years or less are higher on the prose scale than the scores of those with a sentence of more than 10 years, as well as higher on the document scale than the scores of those who do not expect to be released.

Participation in Educational and Vocational Programs

Prisoners were asked about their participation in educational and vocational training programs while in prison. As shown in table 4.3, almost two-thirds of the prisoners have engaged in either educational and/or vocational training programs since incarceration for their current offense. Nevertheless, fewer prisoners (13 percent) participate only in vocational classes than in either education (30 percent) or both types of classes (20 percent). On the prose scale, the average proficiency of those involved only in vocational training is significantly higher than the proficiency of those who participate in both vocational and education programs (265 and 239, respectively). The vocational-only group also performs significantly higher (265) on the prose scale than those who participate in no classes at all (246) and those involved only in education classes (242). For the document scale, prisoners only in vocational classes attain higher proficiency than prisoners in both. The quantitative proficiency of inmates in vocational-only training is higher than the

TABLE 4.2

Percentages and Average Proficiencies on Each Literacy Scale of Inmates, by Length of Sentence

LENGTH OF SENTENCE	n	WGT N (/1,000)	LITERACY SCALES Prose CPCT (SE) PROF (SE)	 Document CPCT (SE) PROF (SE)	 Quantitative CPCT (SE) PROF (SE)
Total Population					
Total	1,146	765	100 (0.0) 246 (1.9)	100 (0.0) 240 (2.2)	100 (0.0) 236 (3.1)
Sentence in Months					
0 to 60	675	442	58 (1.9) 251 (2.2)	58 (1.9) 247 (2.1)	58 (1.9) 240 (2.8)
61 to 120	191	128	17 (1.3) 247 (4.9)	17 (1.3) 240 (5.4)	17 (1.3) 240 (7.2)
121 or more	115	81	11 (1.0) 232 (5.7)	11 (1.0) 231 (6.0)	11 (1.0) 225 (7.3)
Do not expect to be released	97	66	9 (0.9) 236 (6.4)	9 (0.9) 224 (7.4)	9 (0.9) 221 (8.0)
Don't know	68	48	6 (0.9) 233 (9.1)	6 (0.9) 218 (12.9)	6 (0.9) 224 (14.8)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); CPCT = column percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

proficiencies of those in both kinds of programs and education only, but not higher than the proficiency of those not enrolled in any program. Although those who participate in vocational programs generally demonstrate higher proficiencies, they still are performing, on average, only in Level 2.

Prison Work Experiences

Prisoners were also asked whether they were currently involved in work assignments either inside or outside the prison facility. As shown in table 4.4, 69 percent of the inmates reported being assigned to work duties. The proficiency scores of those who work in prison are significantly higher on all

TABLE 4.3

Percentages and Average Proficiencies on Each Literacy Scale of Inmates, by Participation in Education and/or Vocational Programs

PROGRAM			LITERACY SCALES		
			Prose	Document	Quantitative
	n	WGT N (/1,000)	CPCT (SE) PROF (SE)	CPCT (SE) PROF (SE)	CPCT (SE) PROF (SE)
Total Population					
Total	1,144	763	100 (0.0)	100 (0.0)	100 (0.0)
			246 (1.9)	240 (2.2)	236 (3.0)
Program					
No participation in either	425	281	37 (1.7)	37 (1.7)	37 (1.7)
			246 (3.1)	240 (3.8)	239 (4.1)
Education classes only	340	227	30 (1.6)	30 (1.6)	30 (1.6)
			242 (4.6)	237 (5.2)	230 (6.7)
Vocational classes only	150	102	13 (1.2)	13 (1.2)	13 (1.2)
			265 (4.3)	254 (4.3)	253 (5.4)
Both kinds of classes	229	152	20 (1.4)	20 (1.4)	20 (1.4)
			239 (4.0)	235 (4.2)	226 (4.5)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); CPCT = column percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

three literacy scales than the scores of those who do not work. Those who work score 11, 12, and 18 points higher, on average, on the prose, document, and quantitative scales, respectively.

Inmates were asked to indicate not only whether they were working in prison, but also the types of work in which they were engaged. Several areas of work were listed, and respondents were asked to indicate all those in which they were involved. These work assignments included goods production, janitorial, grounds keeping, food preparation, other services (library, store, office help, recreation), maintenance, and other unspecified jobs. In addition to the other unspecified work, janitorial work was the most frequently reported work assignment (except the difference between janitorial and food preparation did not reach statistical significance). Five percent said that they were enrolled in school as a work assignment. There appears to be no

TABLE 4.4

Percentages and Average Proficiencies on Each Literacy Scale of Inmates, by Work Experience in Prison

WORK EXPERIENCE			LITERACY SCALES		
			Prose	Document	Quantitative
	n	WGT N (/1,000)	CPCT (SE) PROF (SE)	CPCT (SE) PROF (SE)	CPCT (SE) PROF (SE)
Total Population					
Total	1,146	765	100 (0.0)	100 (0.0)	100 (0.0)
			246 (1.9)	240 (2.2)	236 (3.0)
Do You Work?					
Yes	795	526	69 (2.5)	69 (2.5)	69 (2.5)
			249 (2.2)	244 (2.3)	241 (2.9)
No	351	239	31 (2.5)	31 (2.5)	31 (2.5)
			238 (4.0)	232 (4.7)	223 (5.0)
Work Assignments					
Do not work	351	239	31 (2.5)	31 (2.5)	31 (2.5)
			238 (4.0)	232 (4.7)	223 (5.0)
Goods production	50	35	5 (0.7)	5 (0.7)	5 (0.7)
			228 (9.3)	220 (9.4)	214 (11.0)
Janitorial	155	106	14 (1.1)	14 (1.1)	14 (1.1)
			236 (5.4)	230 (4.7)	222 (5.1)
Grounds	88	61	8 (1.1)	8 (1.1)	8 (1.1)
			236 (7.5)	238 (9.9)	240 (8.4)
Food preparation	125	85	11 (1.2)	11 (1.2)	11 (1.2)
			254 (4.9)	244 (6.0)	248 (6.9)
Other services	77	48	6 (0.7)	6 (0.7)	6 (0.7)
			257 (5.1)	252 (6.4)	253 (7.6)
Maintenance	104	69	9 (1.0)	9 (1.0)	9 (1.0)
			255 (6.2)	258 (5.5)	251 (5.3)
Enrolled in school	59	38	5 (0.9)	5 (0.9)	5 (0.9)
			240 (7.1)	238 (10.0)	228 (7.7)
Other	207	133	17 (1.7)	17 (1.7)	17 (1.7)
			264 (4.8)	256 (5.5)	256 (5.3)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); CPCT = column percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

significant link between literacy proficiency and the kinds of work assignments prisoners are involved in. The exception is that the proficiency of inmates involved in janitorial work is lower on the quantitative scale than those of inmates in other services, maintenance, and other unspecified jobs as well as lower on the document scale than those of inmates in maintenance and other jobs and on the prose scale of inmates in other jobs. On the other hand, when the proficiencies of those involved in particular work assignments are compared with the proficiencies of those who do not work, some differences are apparent. On the quantitative scale, the proficiencies of prisoners involved in maintenance, other services, and other unspecified jobs are higher than the proficiencies of those not working. In addition, on the document scale, prisoners involved in maintenance and other jobs demonstrate higher proficiency than those not working. The same holds true on the prose scale for inmates working in other unspecified jobs.

Seventy-seven percent of those prisoners with postsecondary education were working in prison as compared with 64 percent of those who had not completed a GED or high school diploma (table 4.5). Although it appears that

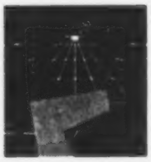


TABLE 4.5

Percentages of Inmates Reporting Level of Education, by Whether Working in Prison

EDUCATION LEVEL			WORKING IN PRISON	
			Working	Not working
	n	WGT N (/1,000)	RPCT (SE)	RPCT (SE)
Total	1,142	762	69 (2.5)	31 (2.5)
0 to 12 years	541	377	64 (3.0)	36 (3.0)
H.S. diploma/GED	337	237	72 (3.3)	28 (3.3)
Postsecondary	264	149	77 (3.1)	23 (3.1)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

a greater percentage of those with a high school diploma or GED have work assignments than do those with no diploma, the difference between the two does not reach statistical significance. Having a high school diploma or GED did not increase the likelihood of working in prison.

Joining Groups While in Prison

In addition to working or taking education and vocational classes, prisoners in most cases have the opportunity to join groups while in prison. As shown in table 4.6, 53 percent of prisoners reported joining groups of various types. The three most frequently joined groups are addiction (29 percent), religious (26 percent), and life skills (20 percent) groups.

The proficiency scores of prisoners who joined groups are significantly higher than those of nonjoiners on all three scales. In addition, prisoners who are involved in three or more groups (17 percent) demonstrate significantly higher average proficiencies than those who joined only one or two groups, except on the quantitative scale where the most involved prisoners perform about the same as those involved in two groups. When the proficiency scores of those in the various groups are compared with the scores of those who did not join groups, only the proficiencies of those in religious groups are not significantly higher on all three scales. When proficiencies among the various groups are compared, generally prisoners demonstrate about the same proficiencies on the three scales, regardless of the type of group joined.

Summary

Although there are differences in demonstrated proficiencies among inmates who are involved in certain prison activities and those who are not, when proficiencies are compared by the specific kinds of activities, there are few significant differences in demonstrated proficiency. This would suggest that literacy proficiency does not have a strong relationship with participation in a specific program or group. The exception to this seems to be involvement in education and/or vocational programs.

The following are summary highlights of the relationship between literacy proficiency and life in prison.

- When proficiencies of inmates are compared by type of offense, there are no significant differences except that inmates sentenced for property offenses demonstrate higher proficiencies than those sentences for drug offenses on the prose and document scales and than those sentenced for violent offenses on the document scale.

TABLE 4.6

Percentages and Average Proficiencies on Each Literacy Scale of Inmates Reporting Groups Joined in Prison

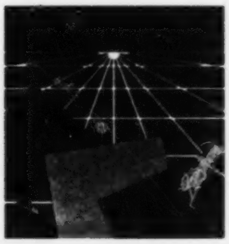
GROUPS JOINED			LITERACY SCALES		
			Prose	Document	Quantitative
	n	WGT N (/1,000)	CPCT (SE) PROF (SE)	CPCT (SE) PROF (SE)	CPCT (SE) PROF (SE)
Have You Joined Any Group?					
Yes	619	406	53 (2.1) 252 (2.9)	53 (2.1) 247 (3.1)	53 (2.1) 243 (3.8)
No	526	358	47 (2.1) 240 (2.7)	47 (2.1) 233 (3.1)	47 (2.1) 228 (4.0)
Types of Groups Joined					
None	526	358	47 (2.1) 240 (2.7)	47 (2.1) 233 (3.1)	47 (2.1) 228 (4.0)
Addiction	343	223	29 (2.2) 255 (4.1)	29 (2.2) 252 (4.0)	29 (2.2) 247 (5.1)
Religious	310	201	26 (1.6) 250 (4.6)	26 (1.6) 241 (4.3)	26 (1.6) 237 (5.0)
Life skills	235	151	20 (1.8) 262 (4.2)	20 (1.8) 258 (4.6)	20 (1.8) 251 (5.1)
Racial/Ethnic	52	34	4 (0.8) 271 (6.8)	4 (0.8) 256 (7.6)	4 (0.8) 262 (7.9)
Prisoner assistance	74	47	6 (1.0) 268 (6.9)	6 (1.0) 263 (5.0)	6 (1.0) 260 (5.6)
Outside community activities	25	15	2 (0.5) *** (****)	2 (0.5) *** (****)	2 (0.5) *** (****)
Prerelease	37	25	3 (0.6) *** (****)	3 (0.6) *** (****)	3 (0.6) *** (****)
Other	52	36	5 (0.8) 269 (6.8)	5 (0.8) 265 (6.9)	5 (0.8) 256 (7.7)
Number of Groups Joined					
0	526	358	47 (2.1) 240 (2.7)	47 (2.1) 233 (3.1)	47 (2.1) 228 (4.0)
One	239	159	21 (1.6) 244 (4.0)	21 (1.6) 238 (4.3)	21 (1.6) 235 (4.8)
Two	178	119	16 (1.1) 246 (5.0)	16 (1.1) 242 (5.6)	16 (1.1) 239 (6.7)
Three or more	202	128	17 (1.7) 267 (4.3)	17 (1.7) 263 (4.4)	17 (1.7) 255 (5.0)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); CPCT = column percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

- Those sentenced for five years or less demonstrate higher proficiency on the prose scale than those sentenced for more than 10 years as well as on the document scale than those who do not expect to be released.
- The proficiency scores of those only in vocational training programs are higher than those of inmates who do not participate in any training program and of those who participate in education only or in both types of programs. Inmates in vocational-only programs, however, still perform, on average, only in Level 2.
- Almost 70 percent of the inmates reported working and these inmates demonstrate higher proficiencies than those not working.
- Over one-half the inmates reported being involved in at least one group in prison, and they demonstrate higher proficiencies than those who are not involved in groups.
- The scores of those who joined three or more groups generally are higher than the scores of those who joined fewer groups.



CHAPTER 5

Recidivism and Literacy

When surveyed, prisoners were asked if they had ever been placed on probation or served time in a jail, prison, juvenile, or other correctional facility for another offense before their current term of confinement. Based upon their responses, prisoners with a former sentence to either probation or incarceration were classified as recidivists — or repeat offenders.

It is often asserted that prisoners with higher literacy levels are less likely than prisoners with lower skill levels to be repeat offenders. Prisoners who can read comprehensively, fill out forms, and analyze numbers are more likely to develop high self-esteem, find employment, and be able to avoid criminal behavior when released than those without those skills. Recent studies, such as ones conducted by the state of Alabama, have generally concluded that inmates who participate in educational and vocational programs while in prison are less likely to return than those prisoners who do not attend school or training.[1] These studies have tracked a cohort of prisoners with and without additional education or training to see if they incur additional sentences after their release. Since the National Adult Literacy Survey provides information on prisoners at only one point in time, this type of before and after study of a test and control group could not be done. An experimental design of this sort is generally the preferred method of determining the effect of education or vocational training on recidivism. This survey, therefore, cannot determine the effect of education and training programs on prisoners after they are released from a prison as an experimental design would.

Nor can this study definitively examine the effect of education on criminal history or vice versa. In 1991, almost one-half of state prison inmates reported they had received academic education and about one-third reported receiving vocational training since entering prison for their current offense.[2] For many inmates with criminal records, a portion of their education was often obtained during incarceration. This fact complicates analysis of the interaction of literacy and recidivism. In this study the prose, document, and quantitative literacy skills of the prison population, as well as their level of education, were assessed at the time of interview, even though these factors may have improved during current and previous incarcerations, while respondents' criminal histories were summed up over a period of time. Literacy skills at the time of interview were evaluated for prisoners who reported previously being on probation or in a correctional facility as well as for those in prison for their first conviction. To determine the effect of literacy on recidivism, increases in literacy skills should be measured along with a historical record of interactions with the criminal justice system. This study, however, does not track literacy skills over a period of time concurrently with the building of a criminal history to determine effects of increased literacy skills on recidivism.

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[1] M. O'Neil. (1990). "Correctional Higher Education: Reduced Recidivism?" *Journal of Correctional Education*, *41*, 28-31. State of Alabama Department of Post-Secondary Education. (1992). "A Study of Alabama Prison Recidivism Rates of Inmates Having Completed Vocational and Academic Programs While Incarcerated Between the Years of 1987 through 1991."

In this chapter, then, the current literacy proficiencies of prisoners and prior records as reported to interviewers are examined together. In addition, recidivism and literacy by educational attainment, race/ethnicity, and presence of disabilities are discussed.

Prior Sentences of Prison Inmates

A majority of prison inmates reported having previous sentences to probation or confinement in a jail, prison, juvenile, or other correctional facility (table 5.1). An estimated 77 percent had been either on probation or in a correctional facility in the past. About 6 in 10 prison inmates had served probation. Almost two-thirds had been sentenced to spend time in a correctional facility.

Prisoners who had been on probation or in a jail, prison, or juvenile facility demonstrate about the same literacy skills as those who had no previous criminal justice status (table 5.1). On all three scales, the average proficiency scores of prisoners who had at some time in their lives served on probation or in a correctional facility are about the same as those who had never been on probation or incarcerated. Moreover, the proficiency scores of inmates who started their criminal careers as juveniles are no different from the scores of those who began their interactions with the criminal justice system as adults. Although the proficiency scores on the prose scale range from 242 for those with no prior sentence to 250 for those who served sentences as both juveniles and adults, with juvenile-only and adult-only scores in between, the differences

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[2] A. Beck, et al. (March 1993). *Survey of State Prison Inmates, 1991.* Washington, DC: US Department of Justice.

TABLE 5.1

Percentages and Average Proficiencies on Each Literacy Scale of Inmates, by Recidivism

RECIDIVISM	n	WGT N (/1,000)	LITERACY SCALES Prose CPCT (SE) PROF (SE)	 Document CPCT (SE) PROF (SE)	 Quantitative CPCT (SE) PROF (SE)
Total Population					
Total	1,143	763	100 (0.0)	100 (0.0)	100 (0.0)
			246 (1.9)	240 (2.2)	236 (3.0)
Probation					
No probation	448	292	39 (2.0)	39 (2.0)	39 (2.0)
			242 (3.0)	236 (3.5)	239 (4.0)
Juvenile only	153	105	14 (1.1)	14 (1.1)	14 (1.1)
			245 (4.7)	244 (5.0)	235 (6.6)
Adult only	307	203	27 (1.7)	27 (1.7)	27 (1.7)
			247 (3.5)	240 (3.6)	231 (4.6)
Both juvenile and adult	220	151	20 (1.5)	20 (1.5)	20 (1.5)
			254 (4.8)	247 (4.5)	239 (5.3)
Incarceration					
No incarceration	426	272	36 (1.7)	36 (1.7)	36 (1.7)
			244 (3.5)	239 (4.0)	237 (4.4)
Juvenile only	57	38	5 (0.5)	5 (0.5)	5 (0.5)
			244 (8.8)	228 (9.7)	226 (10.3)
Adult only	405	275	37 (1.4)	37 (1.4)	37 (1.4)
			245 (3.4)	241 (3.4)	236 (4.4)
Both juvenile and adult	236	164	22 (1.4)	22 (1.4)	22 (1.4)
			252 (4.1)	244 (4.7)	237 (4.7)
Probation and/or Incarceration					
None for both	267	168	22 (1.5)	22 (1.5)	22 (1.5)
			242 (4.6)	236 (5.0)	238 (5.3)
Juvenile only	83	55	7 (0.8)	7 (0.8)	7 (0.8)
			247 (6.7)	237 (7.2)	236 (7.6)
Adult only	405	272	36 (1.6)	36 (1.6)	36 (1.6)
			245 (3.1)	241 (3.2)	235 (4.2)
Both juvenile and adult	371	257	34 (1.5)	34 (1.5)	34 (1.5)
			250 (3.4)	244 (3.6)	236 (4.5)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); CPCT = column percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

in scores are not statistically significant. There is a similar lack of relationship among the scores on the other scales.

The proficiency scores of previously incarcerated inmates are about the same as the scores of those who had never served a sentence in a correctional facility. The greatest mean differences on each scale — 8 points on the prose scale, 11 on the document scale, and 11 on the quantitative scale — do not reach statistical significance given the relatively small sample size.

Inmates who had prior probation sentences demonstrate about the same literacy proficiency as inmates serving time for their first offense. Here, too, the scores on each of the three scales are not statistically different.

In conclusion, recidivists on average demonstrate about the same literacy levels as inmates with no prior sentences. The proficiency scores of those who started their criminal careers as juveniles, either on probation or in a facility, are about the same as the scores of those who had never been on probation or in a correctional facility and of those repeat offenders who started their criminal careers as adults.

Number of Prior Sentences to Probation and/or Incarceration and Literacy

Many prison inmates had extensive interactions with the criminal justice system. Almost half had been on some combination of probation and incarceration three or more times (table 5.2). Almost 3 in 10 had been sentenced to a correctional facility three or more times. About 14 percent had been on probation three or more times.

Prisoners with no prior criminal justice status had about the same literacy proficiencies as those with extensive criminal records, that is, those who had been on probation and/or incarcerated three or more times. First timers averaged 242 on the prose scale; those with three or more convictions averaged 250 — scores which are not statistically different. In addition, the proficiency scores of prisoners previously on probation and/or incarcerated one or two times are not statistically different from those of prisoners who had never been in a correctional facility before (table 5.2). The scores average in the lower half of Level 2. The same pattern is apparent for the document and quantitative scales.

For the prose and document scales, the average proficiency scores for prisoners who had previously been on probation at least three times are higher than for those who had never been on probation — 17 points higher. It was not because prisoners with extensive probation records had attended more school. Inmates on probation three or more times had attended school for about the same amount of time as those who had never been on probation. Prisoners with no probation record attended school an average of 11.1 years; those with three

TABLE 5.2

Percentages and Average Proficiencies on Each Literacy Scale of Inmates, by Number of Times Recidivated

NUMBER OF TIMES RECIDIVATED *Juvenile and/or adult . . .*	n	WGT N (/1,000)	LITERACY SCALES Prose CPCT (SE) PROF (SE)	 Document CPCT (SE) PROF (SE)	 Quantitative CPCT (SE) PROF (SE)
Total Population					
Total	1,143	763	100 (0.0) 246 (1.9)	100 (0.0) 240 (2.2)	100 (0.0) 236 (3.0)
Probation					
None	448	292	39 (2.0) 242 (3.0)	39 (2.0) 236 (3.5)	39 (2.0) 239 (4.0)
1 time	327	223	30 (1.6) 243 (3.5)	30 (1.6) 239 (3.9)	30 (1.6) 230 (5.4)
2 times	192	129	17 (1.2) 250 (4.1)	17 (1.2) 242 (4.8)	17 (1.2) 235 (5.5)
3 or more times	161	108	14 (1.3) 259 (5.1)	14 (1.3) 253 (5.3)	14 (1.3) 242 (5.5)
Incarceration					
None	426	272	36 (1.7) 244 (3.5)	36 (1.7) 239 (4.0)	36 (1.7) 237 (4.4)
1 time	231	155	21 (1.1) 245 (5.1)	21 (1.1) 237 (5.4)	21 (1.1) 233 (6.0)
2 times	148	103	14 (1.0) 251 (4.9)	14 (1.0) 249 (4.9)	14 (1.0) 243 (5.2)
3 or more times	318	219	29 (1.7) 248 (3.8)	29 (1.7) 241 (4.0)	29 (1.7) 233 (4.5)
Probation and/or Incarceration					
None	267	168	22 (1.5) 242 (4.6)	22 (1.5) 236 (5.0)	22 (1.5) 238 (5.3)
1 time	182	123	16 (1.1) 246 (4.4)	16 (1.1) 240 (4.9)	16 (1.1) 239 (5.3)
2 times	173	116	15 (1.1) 241 (6.0)	15 (1.1) 235 (6.8)	15 (1.1) 229 (7.9)
3 or more times	504	344	46 (1.9) 250 (2.9)	46 (1.9) 245 (3.0)	46 (1.9) 237 (4.0)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); CPCT = column percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

or more probation sentences, 10.8 years (see appendix B, table 1). In addition, prisoners with three or more probations were less likely to be employed than prisoners without probation sentences. To the contrary, the longer the probation record, the less likely that prisoners had been employed prior to their current incarceration: 59.5 percent of prisoners with three or more probations were employed either full-time or part-time before their current incarceration, 65.1 percent of those with two previous probations, 67.4 percent of those with one prior probation, and 72.4 percent of those with no previous probation sentence (see appendix B, table 2).

Recidivism and Educational Level of Prison Inmates

An estimated 76 percent of inmates with a high school diploma, GED, or postsecondary education had been on probation or in a correctional facility prior to being incarcerated for their current offense (table 5.3) (although the difference does not reach statistical significance); 81 percent of inmates without a high school diploma or GED were repeat offenders.

The proficiency scores of prisoners with a high school diploma, GED, or postsecondary education average about the same on the three literacy scales regardless of whether they were serving their first sentence or had previously been on probation or in a correctional facility. On all three scales, average proficiency scores generally are within 10 points of 270 (table 5.3). None of the differences reaches statistical significance. The proficiency scores of prisoners with less than a high school diploma also average about the same on all three scales regardless of recidivism, with scores on average in the low 200s.

Those prisoners who had never finished high school or a GED score significantly lower than those who had at least completed high school regardless of criminal histories. While those with less than a high school education perform, on average, in Level 1, those who completed at least high school perform, on average, in Level 2.

Recidivism and Race/Ethnicity of Prison Inmates

An estimated 83 percent of Black inmates had previous sentences, compared with 78 percent of White inmates and 68 percent of those in the other racial/ethnic group, which comprises primarily Hispanics (84 percent of the other category), along with Native Americans and Asians (table 5.4). In addition, 70 percent of Black inmates had been in a correctional facility for a previous offense, compared with 63 percent of White inmates and 54 percent of other inmates. Black and White inmates, however, were equally as likely to be

TABLE 5.3

Percentages and Average Proficiencies on Each Literacy Scale of Inmates at Each Education Level Reporting Recidivism

LITERACY SCALES BY LEVEL OF EDUCATION	n	WGT N (/1,000)	RECIDIVISM: None RPCT (SE) PROF (SE)	RECIDIVISM: Probation only RPCT (SE) PROF (SE)	RECIDIVISM: Incarceration only RPCT (SE) PROF (SE)	RECIDIVISM: Both probation and incarceration RPCT (SE) PROF (SE)
Prose						
0 to 12 years	538	375	19 (1.8)	13 (1.7)	17 (1.9)	51 (2.4)
			211 (6.6)	213 (7.3)	213 (7.5)	229 (3.6)
H.S. diploma/GED or more	600	385	24 (2.0)	14 (1.7)	16 (1.6)	45 (2.3)
			268 (5.4)	278 (4.4)	273 (5.1)	271 (3.8)
Document						
0 to 12 years	538	375	19 (1.8)	13 (1.7)	17 (1.9)	51 (2.4)
			201 (8.3)	211 (7.8)	208 (8.3)	223 (4.2)
H.S. diploma/GED or more	600	385	24 (2.0)	14 (1.7)	16 (1.6)	45 (2.3)
			265 (5.1)	271 (5.5)	266 (4.4)	265 (4.5)
Quantitative						
0 to 12 years	538	375	19 (1.8)	13 (1.7)	17 (1.9)	51 (2.4)
			204 (8.0)	199 (7.8)	214 (7.7)	211 (5.7)
H.S. diploma/GED or more	600	385	24 (2.0)	14 (1.7)	16 (1.6)	45 (2.3)
			266 (5.1)	269 (7.6)	268 (5.8)	258 (4.8)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

recidivists, and both Black and White inmates were more likely to be recidivists than other inmates.

Black prisoners demonstrate about the same proficiencies on the literacy scales regardless of previous criminal record (table 5.4). All Black prisoners performed, on average, in the lower half of Level 2. White inmates generally demonstrate a similar pattern, performing, on average, in the upper half of Level 2, regardless of prior probations or incarcerations.

TABLE 5.4

Percentages and Average Proficiencies on Each Literacy Scale of Inmates Reporting Race/Ethnicity, by Recidivism

LITERACY SCALES BY RACE/ETHNICITY			RECIDIVISM			
			None	Probation only	Incarceration only	Both probation and incarceration
	n	WGT N (/1,000)	RPCT (SE) PROF (SE)	RPCT (SE) PROF (SE)	RPCT (SE) PROF (SE)	RPCT (SE) PROF (SE)
Prose						
White	414	264	22 (2.2)	15 (2.0)	14 (1.8)	49 (2.5)
			277 (5.4)	274 (6.6)	268 (8.6)	267 (4.5)
Black	479	340	17 (1.8)	13 (1.5)	19 (2.0)	51 (2.8)
			247 (5.8)	244 (6.4)	236 (6.5)	242 (4.0)
Other	248	158	32 (3.2)	13 (2.2)	15 (2.5)	39 (3.6)
			195 (9.1)	*** (****)	*** (****)	230 (4.3)
Document						
White	414	264	22 (2.2)	15 (2.0)	14 (1.8)	49 (2.5)
			280 (5.3)	271 (9.1)	265 (8.4)	267 (5.1)
Black	479	340	17 (1.8)	13 (1.5)	19 (2.0)	51 (2.8)
			237 (5.8)	233 (6.0)	229 (7.2)	231 (4.5)
Other	248	158	32 (3.2)	13 (2.2)	15 (2.5)	39 (3.6)
			183 (12.4)	*** (****)	*** (****)	225 (7.9)
Quantitative						
White	414	264	22 (2.2)	15 (2.0)	14 (1.8)	49 (2.5)
			281 (5.8)	267 (9.4)	273 (9.1)	259 (5.5)
Black	479	340	17 (1.8)	13 (1.5)	19 (2.0)	51 (2.8)
			231 (7.0)	219 (7.6)	230 (7.3)	219 (6.4)
Other	248	158	32 (3.2)	13 (2.2)	15 (2.5)	39 (3.6)
			195 (11.7)	*** (****)	*** (****)	217 (7.0)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty)

*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

The proficiency scores of Black inmates, however, are, on average, significantly lower than those of White inmates regardless of recidivism. Particularly on the quantitative scale, the proficiency scores range from 40 to almost 50 points lower than those of their White counterparts, while on the prose scale they are from 25 to almost 35 points lower, and on the document scale they are about 35 to 45 points lower.

Recidivism and Disabilities of Prison Inmates

As shown in chapter 2, prisoners are more likely than the general population to have a disability — 36 percent of prisoners compared with 26 percent of the household population have one or more disabilities. Disabilities include visual, hearing, learning, mental or emotional, physical, or long-term disabilities. Many of these conditions can lessen a person's ability to read and compute, making a person less employable, less able to deal with the demands and stresses of living in the 20th century, and more likely to end up with a criminal career.[3] According to the data in table 5.5, there appears to be no relationship between inmates' criminal careers and the presence or absence of a disability. Almost 8 in 10 with or without disabilities had been on probation or in a correctional facility before their current sentence. About two-thirds had previously been in a jail, prison or juvenile facility — that is, incarcerated only or both on probation and incarcerated — regardless of the presence or absence of disabilities. However, due to the small sample size of this study, all disabilities have been grouped together. It may be that examining selected disabilities, particularly a learning disability, would yield different results. Moreover, disabilities for this report are self-reported by the respondent. Some may be classified as disabled as the result of various examinations but may be unaware of their status.

Inmates who had never been on probation or in a correctional facility demonstrate about the same prose, document and quantitative proficiencies, whether or not they had a disability (table 5.5). Their average proficiency scores range from 230 to 245 on all three scales. Literacy proficiency does vary among recidivists, however, depending on the presence or absence of disabilities. In general, the proficiency scores of recidivists with disabilities are lower than the scores of recidivists with no disabilities. While the proficiency

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[3] E. Herrick. (September-October 1988). "The Hidden Handicap in Prison." *Corrections Compendium, 13* (1).

TABLE 5.5

Percentages and Average Proficiencies on Each Literacy Scale of Inmates With or Without Disabilities Reporting Recidivism

LITERACY SCALES BY DISABILITIES			RECIDIVISM			
			None	Probation only	Incarceration only	Both probation and incarceration
	n	WGT N (/1,000)	RPCT (SE) PROF (SE)	RPCT (SE) PROF (SE)	RPCT (SE) PROF (SE)	RPCT (SE) PROF (SE)
Prose						
No disability	733	483	22 (2.0)	15 (1.5)	16 (1.6)	48 (2.3)
			244 (5.9)	255 (5.9)	255 (4.5)	256 (3.5)
One or more disabilities	399	273	23 (1.9)	11 (1.8)	18 (2.3)	49 (3.0)
			240 (5.9)!	230 (10.9)!	223 (9.2)!	235 (6.2)
Document						
No disability	733	483	22 (2.0)	15 (1.5)	16 (1.6)	48 (2.3)
			238 (6.7)	249 (6.1)	251 (4.0)	250 (4.0)
One or more disabilities	399	273	23 (1.9)	11 (1.8)	18 (2.3)	49 (3.0)
			232 (7.3)!	225 (12.8)!	215 (9.7)!	231 (7.2)
Quantitative						
No disability	733	483	22 (2.0)	15 (1.5)	16 (1.6)	48 (2.3)
			241 (7.5)	241 (7.6)	253 (5.6)	243 (5.1)
One or more disabilities	399	273	23 (1.9)	11 (1.8)	18 (2.3)	49 (3.0)
			232 (8.4)!	216 (11.9)!	223 (7.9)!	215 (8.0)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

scores of those with disabilities who had been on probation only and incarcerated only should be interpreted with caution, the proficiency scores for those who had been both on probation and incarcerated confirm the pattern — the scores of those with disabilities are about 20 to 30 points lower on the three scales than the scores of those with no disabilities.

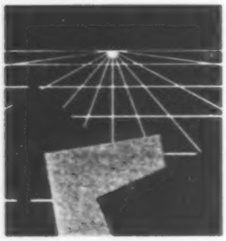
Summary

About 77 percent of prison inmates are repeat offenders. White and Black inmates are more likely to be repeat offenders than inmates of other racial/ethnic groups. But inmates with disabilities are about as likely as those without disabilities to be repeat offenders.

Because the results of this study focus on a particular point in time and literacy is assessed only at the time of the study, it has not been possible to trace the effects of increasing education or literacy proficiency on recidivism. This study does not provide literacy proficiencies for adults who increased their skills while in prison but who are no longer incarcerated.

What is clear is that those inmates who came back to the criminal justice system generally did not differ from first timers with respect to literacy skills. It is impossible to say if they achieved their current skill levels before entering prison for their current offense or after their present incarceration.

There are also no differences in proficiency scores with respect to recidivism when comparisons are made within levels of education and within racial/ethnic groups. In addition, across categories of recidivism, the proficiencies of inmates with no disabilities as well as the proficiencies of inmates with disabilities are about the same.



CHAPTER 6

Comparing Literacy Practices and Self-Perceptions of the Prison and Household Populations

Introduction

This report highlights the many ways in which the prison population differs from the household population. By extending comparisons already drawn between the household and prison populations, this chapter compares the literacy practices of the prison and household populations. The literacy practices discussed include the following:

- reading a variety of materials encountered in daily life
- writing or filling out different materials
- using arithmetic
- reading different types of books

The literacy practices of the prison and the household populations are compared by the following:

- the frequency of reading and writing various materials and using arithmetic
- the differences in proficiency scores among those who report frequent, occasional, and infrequent reading, writing, and use of arithmetic

The frequency with which people use different kinds of printed and written information may reflect the demands of the particular contexts in which they function. Furthermore, without adequate opportunity to interact with texts or documents, individuals may not develop the requisite skills needed to read such materials.

As a complement to investigating the frequency of certain literacy practices, this chapter also compares the prison and household populations with respect to self-perception of their ability to perform certain literacy activities. Related to that is how frequently adults receive help on various literacy-related tasks.

Reading Practices

Inmates were asked how often they read or used particular materials: letters or memos; reports, articles, magazines, or journals; manuals or reference books, including catalogs or parts lists; directions or instructions; diagrams or schematics; and bills, invoices, spreadsheets, or budget tables. The household population was asked two versions of the question: once in connection with respondents' personal use and once in connection with their job. Thus, the tables for the household population present data that are an aggregate of personal and job use.

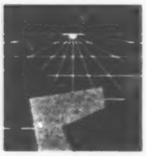


Table 6.1

Percentages of Prison and Household Populations Reporting Frequency of Reading Materials in English

MATERIALS BY POPULATIONS			FREQUENCY		
			Every day or a few times a week	Once a week	Less than once a week
	n	WGT N (/1,000)	RPCT (SE)	RPCT (SE)	RPCT (SE)
Letters, Memos					
Prison	1,145	764	61 (1.5)	14 (1.0)	25 (1.4)
Household	24,914	190,316	46 (0.5)	14 (0.3)	40 (0.6)
Reports, Articles					
Prison	1,145	764	49 (1.5)	17 (1.3)	34 (1.3)
Household	24,906	190,278	44 (0.6)	19 (0.3)	37 (0.5)
Manuals, Reference					
Prison	1,142	762	29 (1.4)	15 (1.5)	56 (1.9)
Household	24,889	190,104	29 (0.5)	19 (0.4)	51 (0.5)
Directions, Instructions					
Prison	1,142	762	22 (1.4)	10 (1.0)	69 (1.5)
Household	24,875	190,004	40 (0.5)	19 (0.4)	41 (0.4)
Diagrams					
Prison	1,142	762	14 (1.1)	7 (0.8)	79 (1.2)
Household	24,841	189,651	10 (0.2)	7 (0.2)	83 (0.3)
Bills, Invoices					
Prison	1,144	763	12 (1.0)	8 (1.0)	81 (1.5)
Household	24,874	189,886	41 (0.5)	21 (0.3)	38 (0.4)

n = sample size; WGT N = population size estimate /1,000 (the sample sizes for subpopulations may not add up to the total sample sizes because of missing data); RPCT = row percentage estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

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Table 6.1 shows the percentages of inmates and householders reporting how often they read certain materials. For both populations, the two types of most frequently read materials (at least a few times a week) are letters or memos and reports or articles. Sixty-one percent of the inmates, however, reported reading letters or memos frequently compared with 46 percent of the household population. About 50 percent of the inmates reported reading reports or articles frequently, compared with 44 percent of the householders, and 14 and 10 percent of inmates and householders, respectively, reported reading diagrams frequently. Twenty-nine percent of both populations reported frequent reading of manuals and reference. Almost twice as many householders as inmates, however, reported reading directions or instructions frequently, and almost four times as many reported reading bills, invoices, and other such documents.

Table 6.2 shows the proficiency scores for the prison and household populations reporting frequency of reading particular materials by selected scales. The particular scale or scales for each type of material were selected because the skills that characterize the scale(s) are the ones that are used to read the type of material. (This also holds true for writing and arithmetic practices, which are reported later in the chapter.)

As shown in table 6.2, the proficiency scores of inmates who read any of the materials less than once a week are significantly lower than the scores of those who read any of the materials frequently (at least a few times a week). The scores of inmates who read less than once a week are also lower than the scores of those who read once a week, with the exception of reading directions. When inmates are compared with householders, the proficiencies of inmates who read materials frequently are about the same as those of householders who read the same materials less than once a week. The exception is on the prose scale for reports, in which case the proficiency of inmates who read frequently is higher than that of householders who read reports infrequently.

Writing Practices

Inmates were also asked how often they wrote or filled out various kinds of documents: letters or memos, forms, and reports or articles. The household population was also asked how often they wrote or filled out these same materials, but, as with reading practices, they were asked with respect to personal use and job use. Thus, once again the data for the household population are an aggregate of their response to these two aspects, personal and job.

As shown in table 6.3, about two-thirds of the inmates and about one-third of the householders reported that they write letters frequently, that is, every day or a few times a week. A slightly higher proportion of householders

TABLE 6.2

Average Proficiencies on Literacy Scales of Prison and Household Populations Reporting Frequency of Reading Materials in English

MATERIALS BY SCALES BY POPULATIONS			FREQUENCY		
			Every day or a few times a week	Once a week	Less than once a week
	n	WGT N (/1,000)	PROF (SE)	PROF (SE)	PROF (SE)
Letters, Memos					
Prose					
Prison	1,145	764	258 (2.4)	240 (5.9)	220 (3.9)
Household	24,914	190,316	287 (0.8)	274 (1.1)	256 (1.1)
Reports, Articles					
Prose					
Prison	1,145	764	260 (2.8)	255 (4.1)	222 (3.3)
Household	24,906	190,278	294 (0.7)	279 (1.2)	245 (1.1)
Manuals, Reference					
Prose					
Prison	1,142	762	264 (3.2)	255 (4.2)	234 (2.5)
Household	24,889	190,104	292 (0.9)	285 (1.2)	257 (0.9)
Document					
Prison	1,142	762	257 (3.3)	250 (4.0)	229 (2.9)
Household	24,889	190,104	286 (1.0)	281 (1.3)	251 (0.9)
Directions, Instructions					
Prose					
Prison	1,142	762	257 (3.9)	254 (6.1)	241 (2.5)
Household	24,875	190,004	281 (0.9)	285 (1.3)	259 (1.0)
Document					
Prison	1,142	762	249 (4.0)	248 (6.0)	236 (2.7)
Household	24,875	190,004	276 (0.9)	277 (1.3)	254 (1.0)
Diagrams					
Document					
Prison	1,142	762	262 (4.3)	270 (4.9)	234 (2.2)
Household	24,841	189,651	291 (1.6)	289 (1.9)	262 (0.8)
Bills, Invoices					
Document					
Prison	1,144	763	256 (4.4)	256 (5.4)	237 (2.3)
Household	24,874	189,886	284 (0.8)	276 (1.0)	244 (1.3)
Quantitative					
Prison	1,144	763	254 (5.7)	249 (5.9)	232 (3.3)
Household	24,874	189,886	289 (0.9)	282 (1.2)	246 (1.4)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

Table 6.3

Percentages of Prison and Household Populations Reporting Frequency of Writing Materials in English

MATERIALS BY POPULATIONS			FREQUENCY		
			Every day or a few times a week	Once a week	Less than once a week
	n	WGT N (/1,000)	RPCT (SE)	RPCT (SE)	RPCT (SE)
Letters, Memos					
Prison	1,146	765	65 (1.4)	13 (1.1)	22 (1.2)
Household	24,907	190,257	34 (0.5)	17 (0.3)	48 (0.5)
Filling Out Forms					
Prison	1,139	759	23 (1.3)	16 (1.5)	62 (1.7)
Household	24,901	190,214	28 (0.4)	25 (0.3)	33 (0.4)
Reports, Articles					
Prison	1,139	757	15 (1.2)	9 (1.1)	76 (1.6)
Household	24,878	190,062	12 (0.3)	10 (0.2)	79 (0.4)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes because of missing data); RPCT = row percentage estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

(28 percent) than inmates (23 percent) reported filling out forms frequently. With respect to report writing, a greater percentage of inmates (15 percent) than householders (12 percent) reported engaging in this practice on a frequent basis.

Although a greater percentage of inmates than householders reported writing letters or memos frequently, their proficiency scores on the prose scale are lower than those of householders, 258 and 289 respectively (table 6.4). The proficiency of inmates who write letters infrequently is 213, while that of householders who write infrequently is 257, which is about the same as that of inmates who write frequently. The pattern of scores is similar on the quantitative scale for filling out forms and on the prose scale for writing reports: the proficiency of householders who engage in these practices less than once a week are comparable to that of inmates who engage in them frequently.

Arithmetic Practices

Another practice related to literacy proficiency is the frequency of using arithmetic. Again, both populations were asked how frequently they used arithmetic, with the household population responding for both personal and

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TABLE 6.4

Average Proficiencies on Literacy Scales of Prison and Household Populations Reporting Frequency of Writing Materials in English

MATERIALS BY SCALES BY POPULATIONS			FREQUENCY		
			Every day or a few times a week	Once a week	Less than once a week
	n	WGT N (/1,000)	PROF (SE)	PROF (SE)	PROF (SE)
Letters, Memos					
Prose					
Prison	1,146	765	258 (2.1)	242 (6.8)	213 (4.7)
Household	24,907	190,257	289 (0.8)	284 (1.3)	257 (0.9)
Filling Out Forms					
Document					
Prison	1,139	759	260 (3.0)	251 (3.7)	231 (3.0)
Household	24,901	190,214	286 (1.0)	283 (1.0)	248 (1.1)
Quantitative					
Prison	1,139	759	252 (4.4)	244 (4.8)	229 (3.8)
Household	24,901	190,214	291 (0.9)	289 (1.1)	251 (1.2)
Reports, Articles					
Prose					
Prison	1,139	757	262 (4.3)	264 (4.7)	241 (2.4)
Household	24,878	190,062	288 (1.5)	288 (1.7)	268 (0.7)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

work situations and their responses aggregated as shown in table 6.5. Sixty-six percent of the inmates reported using arithmetic frequently (at least a few times a week) compared with 78 percent of the household population. The lower percentage of inmates may reflect that they have fewer opportunities or less need to use arithmetic given their incarceration.

The proficiency scores of inmates who use arithmetic frequently and once a week are significantly higher than the scores of those who use arithmetic infrequently — 246 and 233 compared with 203. On the other hand, for the household population the proficiency of those who use arithmetic frequently (285) is significantly higher than the proficiency of those who do so once a

TABLE 6.5

Percentages and Average Proficiencies on the Quantitative Scale of Prison and Household Populations Reporting Frequency of Using Arithmetic

POPULATIONS			FREQUENCY		
			Every day or a few times a week	Once a week	Less than once a week
	n	WGT N (/1,000)	RPCT (SE) PROF (SE)	RPCT (SE) PROF (SE)	RPCT (SE) PROF (SE)
Prison	1,143	763	66 (1.6) 246 (3.4)	14 (1.0) 233 (6.6)	20 (1.5) 203 (5.5)
Household	24,883	190,066	78 (0.5) 285 (0.7)	9 (0.3) 252 (2.3)	13 (0.4) 205 (2.3)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

week (252), which in turn is significantly higher than the proficiency of those who do so infrequently (205). The proficiency scores of householders who use arithmetic frequently or once a week are significantly higher than the proficiencies of inmates using arithmetic with the same frequency. There seems to be no appreciable difference in the proficiencies of inmates and householders who report infrequent use of arithmetic.

Reading Books

The frequency of literacy practices is one important indicator of how literacy skills are put to use. Another dimension is the extent to which individuals report reading book-length materials. Both the prison and household populations were asked which types of books they had read within the last six months (table 6.6).

Only 11 percent of the inmates reported not reading any book within the last six months, compared with 17 percent of the householders. While these nonreaders from both populations, on average, perform in Level 1, the proficiency scores of householders are significantly higher than those of inmates on both scales — 24 points higher on the prose scale and 40 points on

TABLE 6.6

Percentages and Average Prose and Document Proficiencies of Prison and Household Populations, by Types of Books Read

TYPES OF BOOKS READ BY POPULATIONS			LITERACY SCALES	
			Prose	Document
	n	WGT N (/1,000)	PCT (SE) PROF (SE)	PCT (SE) PROF (SE)
Fiction				
Prison	1,142	766	61 (1.5) 263 (2.4)	61 (1.5) 258 (2.5)
Household	24,901	190,524	49 (0.4) 298 (0.7)	49 (0.4) 290 (0.7)
Recreation/Entertainment				
Prison	1,142	766	39 (1.5) 263 (2.4)	39 (1.5) 255 (2.9)
Household	24,901	190,524	31 (0.5) 292 (1.0)	31 (0.5) 286 (1.1)
Current Affairs/History				
Prison	1,142	766	44 (1.6) 262 (2.7)	44 (1.6) 256 (3.1)
Household	24,901	190,524	32 (0.5) 2[illegible]3 (0.9)	32 (0.5) 286 (0.9)
Inspiration/Religion				
Prison	1,142	766	53 (2.1) 251 (2.9)	53 (2.1) 245 (3.0)
Household	24,901	190,524	36 (0.5) 279 (1.1)	36 (0.5) 270 (1.2)
Science/Social Science				
Prison	1,142	766	30 (1.6) 265 (4.0)	30 (1.6) 256 (4.2)
Household	24,901	190,524	23 (0.4) 301 (1.0)	23 (0.4) 295 (1.2)
Reference				
Prison	1,142	766	58 (2.0) 260 (2.6)	58 (2.0) 255 (2.6)
Household	24,901	190,524	54 (0.6) 294 (0.7)	54 (0.6) 288 (0.7)
Manuals				
Prison	1,142	766	33 (1.6) 262 (2.5)	33 (1.6) 259 (2.8)
Household	24,901	190,524	55 (0.4) 291 (0.6)	55 (0.4) 285 (0.8)
Other				
Prison	1,142	766	17 (1.5) 270 (4.8)	17 (1.5) 263 (5.4)
Household	24,901	190,524	19 (0.5) 301 (1.0)	19 (0.5) 295 (1.1)
None				
Prison	1,142	766	11 (0.9) 189 (6.5)	11 (0.9) 169 (8.9)
Household	24,901	190,524	17 (0.4) 213 (1.9)	17 (0.4) 209 (2.2)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

the document scale. Inmates who reported not having read any books demonstrate such low skills that they would have trouble with anything other than very simple texts or very explicit locate tasks.

The types of books most frequently read by inmates are fiction, reference, and inspiration and religion, whereas householders reported reading manuals, reference, and fiction the most. This difference in reading habits may reflect that the household population is more likely to be in situations where they are required to read these types of materials. As expected, given the data for other literacy practices, the proficiencies of inmates who reported reading the various types of books are lower than those of householders.

Another way to compare the prison population with the household is to look at the relationship between literacy level and book reading practice. Table 6.7 shows the percentages of prisoners and householders at each proficiency level who reported reading and not reading books within the last six months. At each proficiency level, a greater percentage of inmates than householders reported reading books. The difference is particularly noticeable at Levels 1 and 2. For example, on the prose scale 76 percent of inmates at Level 1 reported reading books compared with 58 percent of householders, and 93 percent of inmates at Level 2 reported reading books compared with 83 percent of householders. Because such high percentages of prisoners at all levels reported reading books, one pattern that is apparent for the household population is not apparent for the prison population: that is, a step-by step increase in the percentage who reported reading books as the literacy level increases. On both scales, the percentage of householders at Levels 4 and 5 who reported reading books is greater than the percentage at Level 3; the percentage at Level 3 is greater than that at Level 2, which, in turn, is greater than the percentage at Level 1. For the prison population, however, on the prose scale only the percentage at Level 2 is greater than the percentage at Level 1; after that the percentages level off. On the document scale, there are no differences starting with Level 3 and above.

Self-Perceptions of Ability to Perform Literacy Activities

Both the prison and the household populations were asked how well they read and write English and do arithmetic problems when they have to get the numbers from materials written in English. When compared with the household population, a lower percentage of inmates than householders reported doing the activities very well, while a higher percentage reported they do not perform the activities well. As shown in table 6.8, over one-half the prisoners said they read and write very well in English and 40 percent said they do arithmetic very well. In comparison, about 70 percent of householders said

TABLE 6.7

Percentages within Levels and Average Proficiencies on Prose and Document Scales of Prison and Household Populations Reporting Reading Books

LITERACY SCALES BY READING BOOKS BY POPULATIONS	LITERACY LEVELS AND AVERAGE PROFICIENCY						
			Level 1	Level 2	Level 3	Levels 4 & 5	Average proficiency
	n	WGT N (/1,000)	CPCT (SE)	CPCT (SE)	CPCT (SE)	CPCT (SE)	PROF (SE)
Prose							
Prison							
Read books	1,023	679	76 (2.0)	93 (1.9)	96 (1.9)	100 (1.0)	253 (2.1)
Read no books	119	83	24 (6.1)	7 (5.0)	4 (3.0)	1 (0.8)	189 (6.5)
Household							
Read books	21,095	158,605	58 (0.8)	83 (1.0)	92 (0.7)	97 (0.5)	285 (0.6)
Read no books	3,806	31,576	42 (1.4)	17 (1.2)	8 (1.0)	3 (0.5)	213 (1.9)
Document							
Prison							
Read books	1,023	679	78 (1.9)	92 (1.8)	97 (1.5)	100 (0.9)	249 (2.3)
Read no books	119	83	22 (5.5)	8 (4.5)	3 (2.7)	0† (0.6)	169 (8.9)
Household							
Read books	21,095	158,605	62 (0.8)	84 (0.5)	92 (0.5)	96 (0.5)	279 (0.7)
Read no books	3,806	31,576	38 (1.4)	16 (1.2)	8 (1.0)	4 (0.4)	209 (2.2)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); CPCT = column percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

† Percentages less than 0.5 are rounded to 0.

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

they read English very well, 64 percent said they write very well, and 53 percent said they do arithmetic very well. Ten, 13, and 17 percent of prisoners said they do not read, write, or do arithmetic well, respectively. On the other hand, between 5 and 10 percent of householders said they do not perform these activities well.

Both prisoners and householders who said they read, write, and do arithmetic very well demonstrate higher proficiencies than those who said they do so well, who in turn demonstrate higher proficiencies than those who said they do not read, write, or do arithmetic well (table 6.9). On the other hand, prisoners who said they do these activities very well or well demonstrate lower proficiencies than their counterparts in the household population. The exception is on the document scale for those who reported reading well: inmates demonstrate about the same proficiency as householders. Furthermore, inmates who said they write and do arithmetic very well demonstrate about the same proficiencies as householders who reported doing these activities well. For example, the average prose proficiency of inmates who reported writing

Table 6.8

Percentages of Prison and Household Populations Reporting Self-Perceptions of Ability to Perform Literacy Activities

ACTIVITIES BY POPULATIONS	n	WGT N (/1,000)	SELF-PERCEPTION Very well RPCT (SE)	 Well RPCT (SE)	 Not well RPCT (SE)	 Not at all RPCT (SE)
Read English						
Prison	1,144	763	57 (1.8)	31 (1.8)	10 (0.8)	2 (0.4)
Household	24,897	190,164	71 (0.7)	22 (0.6)	5 (0.2)	2 (0.1)
Write English						
Prison	1,144	764	52 (1.7)	33 (1.9)	13 (1.2)	3 (0.4)
Household	24,856	189,884	64 (0.8)	27 (0.7)	7 (0.2)	3 (0.1)
Do Arithmetic						
Prison	1,145	765	40 (1.9)	41 (1.9)	17 (1.5)	2 (0.3)
Household	24,916	190,259	53 (0.8)	35 (0.7)	9 (0.3)	3 (0.1)

n = sample size; WGT N = population size estimate /1,000 (the sample sizes for subpopulations may not add up to the total sample sizes because of missing data); RPCT = row percentage estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

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TABLE 6.9

Average Proficiencies of Prison and Household Populations Reporting Self-Perceptions of Ability to Perform Literacy Activities

ACTIVITIES BY SCALES BY POPULATIONS			SELF- PERCEPTION			
			Very well	Well	Not well	Not at all
	n	WGT N (/1,000)	PROF (SE)	PROF (SE)	PROF (SE)	PROF (SE)
Read English						
Prose						
Prison	1,144	763	267 (2.3)	241 (3.2)	165 (6.9)	*** (****)
Household	24,897	190,164	291 (0.6)	253 (1.2)	163 (3.3)	119 (3.3)
Document						
Prison	1,144	763	262 (2.5)	240 (3.9)	164 (6.4)	*** (****)
Household	24,897	190,164	284 (0.6)	249 (1.4)	168 (3.4)	112 (3.5)
Write English						
Prose						
Prison	1,144	764	266 (2.6)	244 (3.1)	192 (6.0)	*** (****)
Household	24,855	189,884	292 (0.6)	262 (1.2)	193 (2.8)	124 (2.8)
Document						
Prison	1,144	764	261 (2.6)	241 (3.4)	191 (6.9)	*** (****)
Household	24,855	189,884	285 (0.7)	257 (1.3)	196 (2.8)	119 (2.9)
Do Arithmetic						
Quantitative						
Prison	1,145	765	264 (3.6)	231 (3.2)	195 (5.5)	*** (****)
Household	24,916	190,259	295 (0.8)	264 (1.1)	208 (2.3)	117 (3.5)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PROF = average proficiency estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

very well is 266, and the prose proficiency of householders who reported writing well is 262. On the other hand, prisoners who reported not doing these activities well perform about the same as their counterparts in the household population.

While between 80 and 90 percent of inmates reported they do these activities very well, about 50 percent of prisoners are involved in education or education and vocational programs in prison. (See chapter 4.) This participation rate may be more a reflection of their demonstrated skills rather than of a self-perceived need to improve their skills. Even those inmates who said they read, write, and do arithmetic very well or well perform, on average, in Level 2.

Another way to determine how adults view their ability to read and write is to ask how often they receive help on various literacy-related tasks. Both inmates and householders were asked how frequently they get help with the following tasks:

- filling out forms
- reading newspaper articles or other written information
- reading printed information associated with government agencies, public companies, private business, hospitals, etc.

Table 6.10

Percentages of Prison and Household Populations Reporting Frequency of Getting Help With Various Tasks

TASKS BY POPULATIONS			FREQUENCY			
			A lot	Some	A little	None
	n	WGT N (/1,000)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)
Filling Out Forms						
Prison	1,143	762	10 (0.8)	12 (1.2)	18 (1.3)	60 (2.1)
Household	24,914	190,334	12 (0.3)	18 (0.4)	21 (0.4)	49 (0.6)
Reading Newspapers						
Prison	1,143	762	7 (0.7)	8 (0.8)	12 (1.1)	74 (1.7)
Household	24,910	190,290	5 (0.2)	11 (0.4)	17 (0.3)	67 (0.5)
Reading Printed Information						
Prison	1,139	758	11 (1.1)	11 (1.1)	15 (1.3)	63 (2.2)
Household	24,881	190,096	9 (0.3)	16 (0.4)	23 (0.4)	52 (0.6)
Writing Notes, Letters						
Prison	1,140	760	7 (0.9)	6 (0.6)	8 (0.8)	80 (1.3)
Household	24,875	190,055	5 (0.2)	7 (0.2)	11 (0.3)	76 (0.4)
Using Arithmetic						
Prison	1,143	762	6 (1.0)	5 (0.8)	10 (1.1)	78 (1.8)
Household	24,911	190,292	5 (0.2)	6 (0.2)	9 (0.2)	80 (0.4)

n = sample size; WGT N = population size estimate /1,000 (the sample sizes for subpopulations may not add up to the total sample sizes because of missing data); RPCT = row percentage estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992

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- writing notes and letters
- using basic arithmetic, such as when filling out forms

As shown in table 6.10, about the same percentage of inmates reported getting no help with writing notes and using arithmetic (about 80 percent), while a lower percentage (about 60 percent) reported getting no help with filling out forms and reading printed information. When compared with the household population, more inmates than householders reported getting no help with all tasks except using arithmetic. Generally, more householders than inmates reported getting some or a little help for all tasks except using arithmetic. What we cannot know from these data is whether inmates do not think they need help or whether the prison environment is not conducive to their seeking the help they need.

As shown in table 6.11, those in both populations who reported getting a lot of help consistently demonstrate average proficiencies in the range of Level 1, regardless of the task. Even so, the proficiency scores of prisoners who get a lot of help are significantly lower than those of their counterparts in the household population for all tasks on all scales, with the exception of writing notes. These inmates truly seem to need help since their proficiency scores indicate that they are able to perform, on average, only the simplest of tasks in Level 1.

For each task except reading printed information, there are significant differences in the proficiency scores of householders between each category of frequency. That is, those who get some help attain higher scores than those who get a lot, those who get a little help attain higher scores than those who get some, and those who get no help attain higher scores than those who get a little. For almost every task, the average proficiency of those householders who get no help is around 280, or in Level 3. This step-by-step increase in proficiency scores is not evident, however, for the prison population. For all tasks, the scores of inmates who get some help are significantly higher than the scores of those who get a lot. Only for reading printed information and using arithmetic, however, are the scores of those who get a little help significantly higher than the scores of those who get some help. Finally, the scores of inmates who get no help are significantly higher than the scores of those who get a little help, except for reading printed information. In contrast with the household population, those inmates who get no help perform, on average, at about the mid-range of Level 2, around 250, which is to be expected, given that the average proficiency scores of the inmate population on all three scales fall in Level 2.

TABLE 6.11

Average Proficiencies on Literacy Scales of Prison and Household Populations, by Frequency of Help Received for Various Tasks

TASKS BY SCALES BY POPULATIONS	n	WGT N (/1,000)	FREQUENCY A lot RPCT (SE)	 Some RPCT (SE)	 A little RPCT (SE)	 None RPCT (SE)
Filling Out Forms						
Document						
Prison	1,143	762	165 (8.4)	236 (6.7)	234 (4.1)	257 (2.3)
Household	24,914	190,334	217 (2.0)	258 (1.4)	274 (1.3)	279 (0.8)
Reading Newspapers						
Prose						
Prison	1,143	762	168 (7.3)	220 (8.3)	234 (5.4)	259 (1.9)
Household	24,910	190,290	184 (3.5)	243 (1.8)	274 (1.3)	284 (0.7)
Reading Printed Information						
Prose						
Prison	1,139	758	195 (6.7)	239 (5.9)	262 (4.2)	253 (1.9)
Household	24,881	190,096	210 (2.5)	263 (1.7)	283 (1.2)	281 (0.8)
Document						
Prison	1,139	758	172 (7.6)	239 (5.6)	256 (4.0)	250 (2.3)
Household	24,881	190,096	206 (2.3)	259 (1.7)	279 (1.0)	274 (0.8)
Writing Notes, Letters						
Prose						
Prison	1,140	760	169 (8.9)	223 (7.7)	216 (7.5)	257 (1.7)
Household	24,875	190,055	182 (3.4)	242 (2.5)	270 (1.6)	282 (0.6)
Doing Arithmetic						
Quantitative						
Prison	1,143	762	146 (12.7)	190 (9.4)	225 (7.1)	247 (3.1)
Household	24,911	190,292	181 (3.2)	226 (3.0)	254 (1.6)	282 (0.8)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; (SE) = standard error of the estimate (the true population value can be said to be within 2 standard errors of the sample estimate with 95% certainty).

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

Summary

Various literacy practices were compared for the prison and household populations. The most frequently read materials reported by inmates are letters and reports or articles. One kind of material that more inmates than householders reported reading frequently is letters. The proficiency scores of inmates who reported reading any material frequently are significantly higher than the scores of those who reported reading less than once a week. When compared with the proficiencies of householders, however, the proficiencies of inmates who read any materials frequently are not only lower than those of householders who read the same materials frequently, but are also comparable, in some cases, to the proficiencies of householders who read the materials less than once a week.

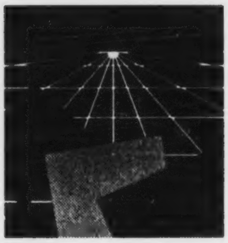
As is the case with reading letters, more inmates than householders reported writing letters on a frequent basis; however, the proficiency scores of these inmates are significantly lower than those of the householders. Once again, the proficiency scores of inmates who perform a particular writing task frequently tend to be comparable with the scores of householders who do the same task less than once a week.

More householders than inmates reported using arithmetic on a frequent basis. As with other literacy practices, those in both populations who frequently use arithmetic perform at higher levels than those who use arithmetic less than once a week. In addition, the proficiencies of householders generally are higher than those of inmates except for the proficiencies of those reporting infrequent use of arithmetic.

Significantly fewer inmates than householders reported not reading a book within the last six months. Inmates reported reading fiction, reference, and inspiration and religious books more than other types of books, whereas householders reported reading manuals, reference, and fiction more. As expected, inmates demonstrate lower proficiencies than householders when compared by type of books read. On the other hand, greater percentages of inmates at each literacy level reported reading books as compared with householders.

Significantly fewer inmates than householders reported that they read or write English very well or do arithmetic very well, while a greater percentage of inmates than householders said they did not do these activities well. Inmates who reported performing these activities very well or well demonstrate lower proficiencies than their counterparts in the household population. Inmates who said they did not perform these activities well, however, perform about the same as householders who also reported not doing these activities well.

For the prison population the areas of greatest need as reflected in the frequency of getting help seem to be filling out forms and reading printed information. Regardless of the task, those who reported getting more help generally have lower proficiency scores. Those needing help apparently seek assistance, while those with relatively higher skills operate more independently.



APPENDIX A

Interpreting the Literacy Scales[*]

Building on the two earlier literacy surveys conducted by Educational Testing Service (ETS), the performance results from the National Adult Literacy Survey are reported on three literacy scales — prose, document, and quantitative — rather than on a single conglomerate scale. Each of the three literacy scales ranges from 0 to 500.

The purpose of this section of the report is to give meaning to the literacy scales — or, more specifically, to interpret the numerical scores that are used to represent adults' proficiencies on these scales. Toward this end, the section begins with a brief summary of the task development process and of the way in which the literacy levels are defined. A detailed description of the prose, document, and quantitative scales is then provided. The five levels on each scale are defined, and the skills and strategies needed to successfully perform the tasks in each level are discussed. Sample tasks are presented to illustrate the types of materials and task demands that characterize the levels on each scale. The section ends with a brief summary of the probabilities of successful performance on tasks within each level for individuals who demonstrated different proficiencies.

Building the Literacy Tasks

The literacy scales make it possible not only to summarize the literacy proficiencies of the total population and of various subpopulations, but also to determine the relative difficulty of the literacy tasks administered in the survey. That is, just as an individual receives a score according to his or her performance on the assessment tasks, each task receives a value according to its difficulty as determined by the performance of the adults who participated in the survey. Previous research conducted at ETS has shown that the difficulty of a literacy task, and therefore its placement on a particular literacy scale, is determined by three factors: the structure or linguistic format of the material, the content and/or the context from which it is selected, and the nature of the task, or what the individual is asked to do with the material.

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[*] This chapter originally appeared in the first report on the National Adult Literacy Survey, I. S. Kirsch, A. Jungeblut, L. Jenkins, and A. Kolstad. (September 1993). *Adult Literacy In America: A First Look at the Results of the National Adult Literacy Survey.* Washington, DC: US Department of Education.

Materials. The materials selected for inclusion in NALS reflect a variety of linguistic formats that adults encounter in their daily activities. Most of the prose materials used in the survey are expository — that is, they describe, define, or inform — since most of the prose that adults read is expository in nature; however, narratives and poetry are included, as well. The prose materials include an array of linguistic structures, ranging from texts that are highly organized both topically and visually to those that are loosely organized. They also include texts of varying lengths, from multiple-page magazine selections to short newspaper articles. All prose materials included in the survey were reproduced in their original format.

The document materials represent a wide variety of structures, which are characterized as tables, charts and graphs, forms, and maps, among other categories. Tables include matrix documents in which information is arrayed in rows and columns — for example, bus or airplane schedules, lists, or tables of numbers. Documents categorized as charts and graphs include pie charts, bar graphs, and line graphs. Forms are documents that require information to be filled in, while other structures include such materials as advertisements and coupons.

The quantitative tasks require the reader to perform arithmetic operations using numbers that are embedded in print. Since there are no materials that are unique to quantitative tasks, these tasks were based on prose materials and documents. Most quantitative tasks were, in fact, based on document structures.

Content and/or Contexts. Adults do not read printed or written materials in a vacuum. Rather, they read within a particular context or for a particular purpose. Accordingly, the NALS materials represent a variety of contexts and contents. Six such areas were identified: home and family; health and safety; community and citizenship; consumer economics; work; and leisure and recreation.

In selecting materials to represent these areas, efforts were made to include as broad a range as possible, as well as to select universally relevant contexts and contents. This was to ensure that the materials would not be so specialized as to be familiar only to certain groups. In this way, disadvantages for individuals with limited background knowledge were minimized.

Types of Tasks. After the materials were selected, tasks were developed to accompany the materials. These tasks were designed to simulate the ways in which people use various types of materials and to require different strategies for successful task completion. For both the prose and document scales, the tasks can be organized into three major categories: *locating*, *integrating*, and *generating* information. In the locating tasks, readers are asked to match information that is given in a question or directive with either literal or synonymous information in the text or document. Integrating tasks require the reader to incorporate two or more pieces of information located in different parts of the text or document. Generating tasks require readers not only to process information located in different parts of the material, but also to go beyond that information by drawing on their knowledge about a subject or by making broad text-based inferences.

Quantitative tasks require readers to perform arithmetic operations — addition, subtraction, multiplication, or division — either singly or in combination. In some tasks, the type of operation that must be performed is obvious from the wording of the question, while in other tasks the readers must infer which operation is to be performed. Similarly, the numbers that are required to perform the operation can, in some cases, be easily identified, while in others, the numbers that are needed are embedded in text. Moreover, some quantitative tasks require the reader to explain how the problem would be solved rather than perform the calculation, and on some tasks the use of a simple four-function calculator is required.

Defining the Literacy Levels

The relative difficulty of the assessment tasks reflects the interactions among the various task characteristics described here. As shown in Figure 1 in the Introduction to this report, the score point assigned to each task is the point at which the individuals with that proficiency score have a high probability of responding correctly. In this survey, an 80 percent probability of correct response was the criterion used. While some tasks were at the very low end of the scale and some at the very high end, most had difficulty values in the 200 to 400 range.

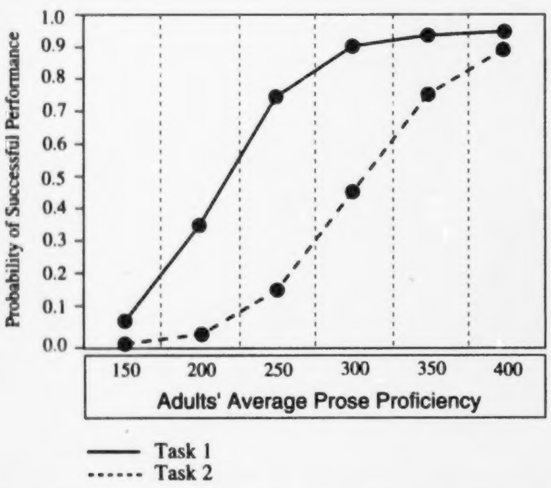
By assigning scale values to both the individuals and tasks, it is possible to see how well adults with varying proficiencies performed on tasks of varying difficulty. While individuals with low proficiency tend to perform well on tasks with difficulty values equivalent to or below their level of proficiency, they are less likely to succeed on tasks with higher difficulty values. This does not mean that individuals with low proficiency can never succeed on more difficult literacy tasks — that is, on tasks whose difficulty values are higher than their proficiencies. They may do so some of the time. Rather, it means that their probability of success is not as high. In other words, the more difficult the task relative to their proficiency, the lower their likelihood of responding correctly.

The response probabilities for two tasks on the prose scale are displayed in Figure 3.1. The difficulty of the first task is measured at the 250 point on the scale, and the second task is at the 350 point. This means that an individual would have to score at the 250 point on the prose scale to have an 80 percent chance (that is, a .8 probability) of responding correctly to Task 1. Adults scoring at the 200 point on the prose scale have only a 40 percent chance of responding correctly to this task, whereas those scoring at the 300 point and above would be expected to rarely miss this task and others like it.

In contrast, an individual would need to score at the 350 point to have an 80 percent chance of responding correctly to Task 2. While individuals performing at the 250 point would have an 80 percent chance of success on the first task, their probability of answering the more difficult second task correctly is only 20 percent. An individual scoring at the 300 point is likely to succeed on this more difficult task only half the time.

NALS Figure A.1

Probabilities of Successful Performance on Two Prose Tasks by Individuals at Selected Points on the Prose Scale



Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

An analogy may help clarify the information presented for the two prose tasks. The relationship between task difficulty and individual proficiency is much like the high jump event in track and field, in which an athlete tries to jump over a bar that is placed at increasing heights. Each high jumper has a height at which he or she is proficient. That is, he or she is able to clear the bar at that height with a high probability of success, and can clear the bar at lower levels almost every time. When the bar is higher than their level of proficiency, however, they can be expected to have a much lower chance of clearing it successfully.

Once the literacy tasks are placed on their respective scales, using the criterion described here, it is possible to see how well the interactions among the task characteristics explain the placement of various tasks along the scales.[1] In investigating the progression of task characteristics across the scales, certain questions are of interest. Do tasks with similar difficulty values (that is, with difficulty values near one another on a scale) have certain shared characteristics? Do these characteristics differ in systematic ways from tasks in either higher or lower levels of difficulty? Analyses of the interactions between the materials read and the tasks based on these materials reveal that an ordered set of information-processing skills appears to be called into play to perform the range of tasks along each scale.

To capture this ordering, each scale was divided into five levels that reflect the progression of information-processing skills and strategies: Level 1 (0 to 225), Level 2 (226 to 275), Level 3 (276 to 325), Level 4 (326 to 375), and Level 5 (376 to 500). These levels were determined not as a result of any statistical property of the scales, but rather as a result of shifts in the skills and strategies required to succeed on various tasks along the scales, from simple to complex.

The remaining pages of this section describe each scale in terms of the nature of the task demands at each of the five levels. After a brief introduction to each scale, sample tasks in each level are presented and the factors contributing to their difficulty are discussed. The aim of these discussions is to give meaning to the scales and to facilitate interpretation of the results provided in the first and second sections of this report.

Interpreting the Literacy Levels

Prose Literacy

The ability to understand and use information contained in various kinds of textual material is an important aspect of literacy. Most of the prose materials administered in this assessment were expository — that is, they inform, define, or describe — since these constitute much of the prose that adults read. Some narrative texts and poems were included, as well. The prose materials were drawn from newspapers, magazines, books, brochures, and pamphlets and reprinted in their entirety, using the typography and layout of the original source. As a result, the materials vary widely in length, density of information, and the use of structural or organizational aids such as section or paragraph headings, italic or bold face type, and bullets.

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[1] I.S. Kirsch and P.B. Mosenthal. (1990). "Exploring Document Literacy: Variables Underlying the Performance of Young Adults." *Reading Research Quarterly*, 25. pp. 5-30.

Each prose selection was accompanied by one or more questions or directives which asked the reader to perform specific tasks. These tasks represent three major aspects of information-processing: locating, integrating, and generating. Locating tasks require the reader to find information in the text based on conditions or features specified in the question or directive. The match may be literal or synonymous, or the reader may need to make a text-based inference in order to perform the task successfully. Integrating tasks ask the reader to compare or contrast two or more pieces of information from the text. In some cases the information can be found in a single paragraph, while in others it appears in different paragraphs or sections. In the generating tasks, readers must produce a written response by making text-based inferences or drawing on their own background knowledge.

In all, the prose literacy scale includes 41 tasks with difficulty values ranging from 149 to 468. It is important to remember that the locating, generating, and integrating tasks extend over a range of difficulty as a result of interactions with other variables including:

- the number of categories or features of information that the reader must process
- the number of categories or features of information in the text that can distract the reader, or that may seem plausible but are incorrect
- the degree to which information given in the question is obviously related to the information contained in the text
- the length and density of the text

The five levels of prose literacy are defined, and sample tasks provided, in the following pages.

Prose Level 1 Scale range: 0 to 225

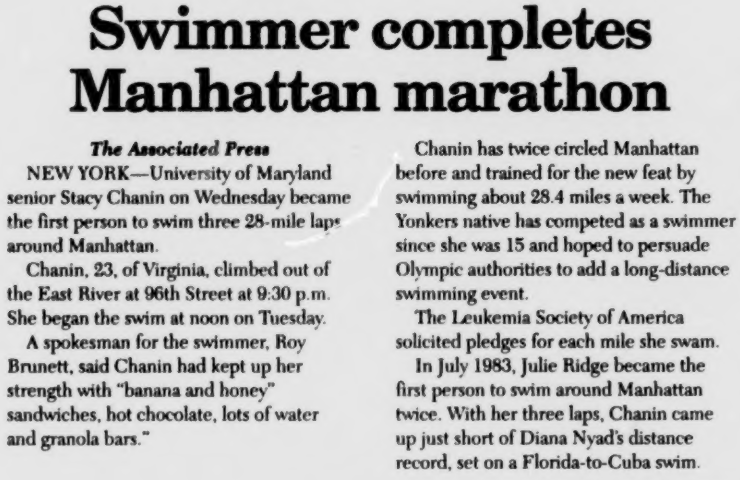
Most of the tasks in this level require the reader to read relatively short text to locate a single piece of information which is identical to or synonymous with the information given in the question or directive. If plausible but incorrect information is present in the text, it tends not to be located near the correct information.

Average difficulty value of tasks in this level: 198
Percentage of adults performing in this level: 21%

Tasks in this level require the reader to locate and match a single piece of information in the text. Typically the match between the question or directive and the text is literal, although sometimes synonymous matches may be necessary. The text is usually brief or has organizational aids such as paragraph headings or italics that suggest where in the text the reader should search for the specified information. The word or phrase to be matched appears only once in the text.

One task in Level 1 with a difficulty value of 208 asks respondents to read a newspaper article about a marathon swimmer and to underline the sentence that tells what she ate during a swim. Only one reference to food is contained in the passage, and it does not use the word "ate." Rather, the article says the swimmer "kept up her strength with banana and honey sandwiches, hot chocolate, lots of water and granola bars." The reader must match the word "ate" in the directive with the only reference to foods in the article.

Underline the sentence that tells what Ms. Chanin ate during the swim.



Swimmer completes Manhattan marathon

The Associated Press

NEW YORK—University of Maryland senior Stacy Chanin on Wednesday became the first person to swim three 28-mile laps around Manhattan.

Chanin, 23, of Virginia, climbed out of the East River at 96th Street at 9:30 p.m. She began the swim at noon on Tuesday.

A spokesman for the swimmer, Roy Brunett, said Chanin had kept up her strength with "banana and honey" sandwiches, hot chocolate, lots of water and granola bars."

Chanin has twice circled Manhattan before and trained for the new feat by swimming about 28.4 miles a week. The Yonkers native has competed as a swimmer since she was 15 and hoped to persuade Olympic authorities to add a long-distance swimming event.

The Leukemia Society of America solicited pledges for each mile she swam.

In July 1983, Julie Ridge became the first person to swim around Manhattan twice. With her three laps, Chanin came up just short of Diana Nyad's distance record, set on a Florida-to-Cuba swim.

Reduced from original copy.

Prose Level 2 Scale range: 226 to 275

Some tasks in this level require readers to locate a single piece of information in the text; however, several distractors or plausible but incorrect pieces of information may be present, or low-level inferences may be required. Other tasks require the reader to integrate two or more pieces of information or to compare and contrast easily identifiable information based on a criterion provided in the question or directive.

Average difficulty value of tasks in this level: 259
Percentage of adults performing in this level: 27%

Like the tasks in Level 1, most of the tasks in this level ask the reader to locate information. However, these tasks place more varied demands on the reader. For example, they frequently require readers to match more than a single piece of information in the text and to discount information that only partially satisfies the question. If plausible but incomplete information is included in the text, such distractors do not appear near the sentence or paragraph that contains the correct answer. For example, a task based on the sports article reproduced earlier asks the reader to identify the age at which the marathon swimmer began to swim competitively. The article first provides the swimmer's current age of 23, which is a plausible but incorrect answer. The correct information, age 15, is found toward the end of the article.

In addition to directing the reader to locate more than a single piece of information in the text, low-level inferences based on the text may be required to respond correctly. Other tasks in Level 2 (226 to 275) require the reader to identify information that matches a given criterion. For example, in one task with a difficulty value of 275, readers were asked to identify specifically what was wrong with an appliance by choosing the most appropriate of four statements describing its malfunction.

A manufacturing company provides its customers with the following instructions for returning appliances for service:

When returning appliance for servicing, include a note telling as clearly and as specifically as possible what is wrong with the appliance.

A repair person for the company receives four appliances with the following notes attached. Circle the letter next to the note which best follows the instructions supplied by the company.

A The clock does not run correctly on this clock radio. I tried fixing it, but I couldn't.

B My clock radio is not working. It stopped working right after I used it for five days.

C The alarm on my clock radio doesn't go off at the time I set. It rings 15-30 minutes later.

D This radio is broken. Please repair and return by United Parcel Service to the address on my slip.

Readers in this level may also be asked to infer a recurring theme. One task with a difficulty value of 262 asks respondents to read a poem that uses several metaphors to represent a single, familiar concept and to identify its theme. The repetitiveness and familiarity of the allusions appear to make this "generating" task relatively easy.

Prose Level 3 Scale range: 276 to 325

Tasks in this level tend to require readers to make literal or synonymous matches between the text and information given in the task, or to make matches that require low-level inferences. Other tasks ask readers to integrate information from dense or lengthy text that contains no organizational aids such as headings. Readers may also be asked to generate a response based on information that can be easily identified in the text. Distracting information is present, but is not located near the correct information.

Average difficulty value of tasks in this level: 298
Percentage of adults performing in this level: 32%

One of the easier Level 3 tasks requires the reader to write a brief letter explaining that an error has been made on a credit card bill. This task is at 280 on the prose scale. Other tasks in this level require the reader to search fairly dense text for information. Some of the tasks ask respondents to make a literal or synonymous match on more than a single feature, while other tasks ask them to integrate multiple pieces of information from a long passage that does not contain organizational aids.

One of the more difficult Level 3 tasks (with a difficulty value of 316) requires the reader to read a magazine article about an Asian-American woman and to provide two facts that support an inference made from the text. The question directs the reader to identify what Ida Chen did to help resolve conflicts due to discrimination.

List two things that Chen became involved in or has done to help resolve conflicts due to discrimination.

IDA CHEN is the first Asian-American woman to become a judge of the Commonwealth of Pennsylvania.

She understands discrimination because she has experienced it herself.

Soft-spoken and eminently dignified, Judge Ida Chen prefers hearing about a new acquaintance rather than talking about herself. She wants to know about career plans, hopes, dreams, fears. She gives unsolicited advice as well as encouragement. She instills confidence.

Her father once hoped that she would become a professor. And she would have also made an outstanding social worker or guidance counselor. The truth is that Chen wears the caps of all these professions as a Family Court judge of the Court of Common Pleas of Philadelphia County, as a participant in public advocacy for minorities, and as a particularly sensitive, caring person.

She understands discrimination because she has experienced it herself. As an elementary school student, Chen tried to join the local Brownie troop. "You can't be a member," she was told. "Only American girls are in the Brownies."

Originally intent upon a career as a journalist, she selected Temple University because of its outstanding journalism department and affordable tuition. Independence being a personal need, she paid for her tuition by working for Temple's Department of Criminal Justice. There she had her first encounter with the legal world and it turned her career plans in a new direction — law school.

Through meticulous planning, Chen was able to earn her undergraduate degree in two and a half years and she continued to work three jobs. But when she began her first semester as a Temple law student in the fall of 1973, she was barely able to stay awake. Her teacher Lynne Abraham, now a Common Pleas Court judge herself, couldn't help but notice Chen yawning in the back of the class, and when she determined that this student was not a party animal but a workhorse, she arranged a teaching assistant's job for Chen on campus.

After graduating from Temple Law School in 1976, Chen worked for the U.S. Equal Employment Opportunity Commission where she was a litigator on behalf of plaintiffs who experienced discrimination in the workplace, and then moved on to become the first Asian-American to serve on the Philadelphia Commission on Human Relations.

Appointed by Mayor Wilson Goode, Chen worked with community leaders to resolve racial and ethnic tensions and also made time to contribute free legal counsel to a variety of activist groups.

The "Help Wanted" section of the newspaper contained an entry that aroused Chen's curiosity — an ad for a judge's position. Her application resulted in her selection by a state judicial committee to fill a seat in the state court. And in July of 1988, she officially became a judge of the Court of Common Pleas. Running as both a Republican and Democratic candidate, her position was secured when she won her seat on the bench at last November's election.

At Family Court, Chen presides over criminal and civil cases which include adult sex crimes, domestic violence, juvenile delinquency, custody, divorce and support. Not a pretty picture.

Chen recalls her first day as judge, hearing a juvenile dependency case — "It was a horrifying experience. I broke down because the cases were so depressing," she remembers.

Outside of the courtroom, Chen has made a name for herself in resolving interracial conflicts, while glorying in her Chinese-American identity. In a 1986 incident involving the desecration of Korean street signs in a Philadelphia neighborhood, Chen called for a meeting with the leaders of that community to help resolve the conflict.

Chen's interest in community advocacy is not limited to Asian communities. She has been involved in Hispanic, Jewish and Black issues, and because of her participation in the Ethnic Affairs Committee of the Anti-Defamation League of B'nai B'rith, Chen was one of 10 women nationwide selected to take part in a mission to Israel.

With her recently won mandate to judicate in the affairs of Pennsylvania's citizens, Chen has pledged to work tirelessly to defend the rights of its people and contribute to the improvement of human welfare. She would have made a fabulous Brownie.

— Jessica Schultz

Prose Level 4 Scale range: 326 to 375

These tasks require readers to perform multiple-feature matches and to integrate or synthesize information from complex or lengthy passages. More complex inferences are needed to perform successfully. Conditional information is frequently present in tasks in this level and must be taken into consideration by the reader.

Average difficulty value of tasks in this level: 352
Percentage of adults performing in this level: 17%

A prose task with a difficulty value of 328 requires the reader to synthesize the repeated statements of an argument from a newspaper column in order to generate a theme or organizing principle. In this instance, the supporting statements are elaborated in different parts of a lengthy text.

A more challenging task (with a difficulty value of 359) directs the reader to contrast the two opposing views stated in the newspaper feature reprinted here that discusses the existence of technologies that can be used to produce more fuel-efficient cars.

Contrast Dewey's and Hanna's views about the existence of technologies that can be used to produce more fuel-efficient cars while maintaining the size of the cars.

Face-Off: Getting More Miles Per Gallon

Demand cars with better gas mileage

By Robert Dewey
Guest columnist

WASHINGTON — Warning: Automakers are resurrecting their heavy-metal dinosaurs, aka gas guzzlers.

Government reports show that average new-car mileage has declined to 28.2 miles per gallon — the 1986 level. To reverse this trend, Congress must significantly increase existing gas-mileage standards.

More than half our Nobel laureates and 700 members of the National Academy of Sciences recently called global warming "the most serious environmental threat of the 21st century." In 1989, oil imports climbed to a near-record 46% of U.S. consumption. Increasing gas mileage is the single biggest step we can take to reduce oil imports and curb global warming. Greater efficiency also lowers our trade deficit (oil imports represent 40% of it) and decreases the need to drill in pristine areas.

Bigger engines and bigger cars mean bigger profits for automakers, who offer us the products they want us to buy. More than ever, Americans want products that have less of an environmental impact. But with only a few fuel-efficient cars to choose from, how do we find ones that meet all our needs?

Government studies show automakers have the technology to dramatically improve gas mileage — while maintaining the 1987 levels of comfort, performance and size mix of vehicles. Automakers also have the ability to make their products safer. The cost of these improvements will be offset by savings at the gas pump!

Cars can average 45 mpg and light trucks 35 mpg primarily by utilizing engine and transmission technologies already on a few cars today. Further improvements are possible by using technologies like the two-stroke engine and better aerodynamics that have been developed but not used.

When the current vehicle efficiency standards were proposed in 1974, Ford wrongly predicted that they "would require either all sub-Pinto-sized vehicles or some mix of vehicles ranging from a sub-subcompact to perhaps a Maverick." At that time, Congress required a 100% efficiency increase; raising gas mileage to 45 mpg requires only a 60% increase.

Americans want comfortable, safe and efficient cars. If automakers won't provide them, Congress must mandate them when it considers the issue this summer.

Let's hope lawmakers put the best interest of the environment and the nation ahead of the automakers' lobbyists and political action committees.

Robert Dewey is a conservation analyst for the Environmental Action Foundation.

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Don't demand end to cars people want

By Thomas H. Hanna
Guest columnist

DETROIT — Do Americans look forward to the day when they'll have to haul groceries, shuttle the kids to and from school or take family vacations in compact and subcompact cars?

I doubt it — which is why U.S. and import carmakers oppose the 40-miles-per-gallon to 45 mpg corporate average fuel economy mandates that some are pushing in Congress, either to curb tailpipe carbon dioxide emissions because of alleged global warming or for energy conservation.

Since the mid-1970s, automakers have doubled the fleet average fuel economy of new cars to 28 mpg — and further progress will be made.

Compact and subcompact cars with mileage of 40 mpg or better are now available, yet they appeal to only 5% of U.S. car buyers.

But to achieve a U.S. fleet average of 40 mpg to 45 mpg, carmakers would have to sharply limit the availability of family-size models and dramatically trim the size and weight of most cars.

There simply are not magic technologies to meet such a standard.

Almost every car now sold in the USA would have to be drastically downsized, and many would be obsolete.

As a result, Americans each year would be unable to buy the vehicles most suited for their needs: mid- and family-size models, luxury automobiles, mini-vans, small trucks and utility vehicles.

The fleet shift to compacts and subcompacts could also force the closing of assembly plants, supplier firms and dealerships, at a cost of thousands of U.S. jobs.

Although a growing number of scientists are skeptical of global warming, the issue deserves thorough international scientific evaluation, not premature unilateral U.S. action.

Carbon dioxide emissions from U.S. vehicles total less than 2.5% of worldwide "greenhouse" gases. Even doubling today's corporate average fuel economy for U.S. cars — if technically possible — would cut those gases about .5%

Whatever the motivation — alleged global warming or energy conservation — the stakes are high for millions of Americans and thousands of U.S. jobs in unrealistic corporate average fuel economy mandates.

Thomas H. Hanna is president and chief executive officer of the Motor Vehicle Manufacturers Association of the United States.

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Two other tasks in Level 4 on the prose scale require the reader to draw on background knowledge in responding to questions asked about two poems. In one they are asked to generate an unfamiliar theme from a short poem (difficulty value of 362), and in the other they are asked to compare two metaphors (value of 374).

Prose Level 5

Scale range: 376 to 500

Some tasks in this level require the reader to search for information in dense text which contains a number of plausible distractors. Others ask readers to make high-level inferences or use specialized background knowledge. Some tasks ask readers to contrast complex information.

Average difficulty value of tasks in this level: 423
Percentage of adults performing in this level: 3%

Two tasks in Level 5 require the reader to search for information in dense text containing several plausible distractors. One such task (difficulty value of 410) requires the respondent to read information about jury selection and service. The question requires the reader to interpret information to identify two ways in which prospective jurors may be challenged.

Identify and summarize the two kinds of challenges that attorneys use while selecting members of a jury.

DO YOU HAVE A QUESTION?

QUESTION: What is the new program for scheduling jurors?

ANSWER: This is a new way of organizing and scheduling jurors that is being introduced all over the country. The goals of this program are to save money, increase the number of citizens who are summoned to serve and decrease the inconvenience of serving.

The program means that instead of calling jurors for two weeks, jurors now serve only one day, or for the length of one trial if they are selected to hear a case. Jurors who are not selected to hear a case are excused at the end of the day, and their obligations to serve as jurors are fulfilled for three years. The average trial lasts two days once testimony begins.

An important part of what is called the One Day – One Trial program is the "standby" juror. This is a person called to the Courthouse if the number of cases to be tried requires more jurors than originally estimated. Once called to the Courthouse, the standby becomes a "regular" juror, and his or her service is complete at the end of one day or one trial, the same as everyone else.

Q. How was I summoned?

A. The basic source for names of eligible jurors is the Driver's License list which is supplemented by the voter registration list. Names are chosen from these combined lists by a computer in a completely random manner.

Once in the Courthouse, jurors are selected for a trial by this same computer and random selection process.

Q. How is the Jury for a particular trial selected?

A. When a group of prospective jurors is selected, more than the number needed for a trial are called. Once this group has been seated in the courtroom, either the Judge or the attorneys ask questions. This is called *voir dire*. The purpose of questions asked during *voir dire* is to ensure that all of the jurors who are selected to hear the case will be unbiased, objective and attentive.

In most cases, prospective jurors will be asked to raise their hands when a particular question applies to them. Examples of questions often asked are: Do you know the Plaintiff, Defendant or the attorneys in this case? Have you been involved in a case similar to this one yourself? Where the answer is yes, the jurors raising hands may be asked additional questions, as the purpose is to guarantee a fair trial for all parties. When an attorney believes that there is a legal reason to excuse a juror, he or she will challenge the juror for cause. Unless both attorneys agree that the juror should be excused, the Judge must either sustain or override the challenge.

After all challenges for cause have been ruled upon, the attorneys will select the trial jury from those who remain by exercising peremptory challenges. Unlike challenges for cause, no reason need be given for excusing a juror by peremptory challenge. Attorneys usually exercise these challenges by taking turns striking names from a list until both are satisfied with the jurors at the top of the list or until they use up the number of challenges allowed. Challenged jurors and any extra jurors will then be excused and asked to return to the jury selection room.

Jurors should not feel rejected or insulted if they are excused for cause by the Court or peremptorily challenged by one of the attorneys. The *voir dire* process and challenging of jurors is simply our judicial system's way of guaranteeing both parties to a lawsuit a fair trial.

Q. Am I guaranteed to serve on a jury?

A. Not all jurors who are summoned actually hear a case. Sometimes all the Judges are still working on trials from the previous day, and no new jurors are chosen. Normally, however, some new cases begin every day. Sometimes jurors are challenged and not selected.

A somewhat more demanding task (difficulty value of 423) involves the magazine article on Ida Chen reproduced earlier. This more challenging task requires the reader to explain the phrase "recently won mandate" used at the end of the text. To explain this phrase, the reader needs to understand the concept of a political mandate as it applies to Ida Chen and the way she is portrayed in this article.

Document Literacy

Another important aspect of being literate in modern society is having the knowledge and skills needed to process information from documents. We often encounter tables, schedules, charts, graphs, maps, and forms in everyday life, both at home and at work. In fact, researchers have found that many of us spend more time reading documents than any other type of material.[2] The ability to locate and use information from documents is therefore essential.

Success in processing documents appears to depend at least in part on the ability to locate information in complex arrays and to use this information in the appropriate ways. Procedural knowledge may be needed to transfer information from one source or document to another, as is necessary in completing applications or order forms.

The NALS document literacy scale contains 81 tasks with difficulty values that range from 69 to 396 on the scale. By examining tasks associated with various proficiency levels, we can identify characteristics that appear to make certain types of document tasks more or less difficult for readers. Questions and directives associated with these tasks are basically of four types: *locating, cycling, integrating*, and *generating*. Locating tasks require the readers to match one or more features of information stated in the question to either identical or synonymous information given in the document. Cycling tasks require the reader to locate and match one or more features, but differ in that they require the reader to engage in a series of feature matches to satisfy conditions given in the question. The integrating tasks typically require the reader to compare and contrast information in adjacent parts of the document. In the generating tasks, readers must produce a written response by processing information found in the document and also making text-based inferences or drawing on their own background knowledge.

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[2] J.T. Guthrie, M. Seifert, and I.S. Kirsch. (1986). "Effects of Education, Occupation, and Setting on Reading Practices." *American Educational Research Journal*, 23. pp. 151-160.

As with the prose tasks, each type of question or directive extends over a range of difficulty as a result of interactions among several variables or task characteristics that include:

- the number of categories or features of information in the question that the reader has to process or match
- the number of categories or features of information in the document that can serve to distract the reader or that may seem plausible but are incorrect
- the extent to which the information asked for in the question is obviously related to the information stated in the document and
- the structure of the document

A more detailed discussion of the five levels of document literacy is provided in the following pages.

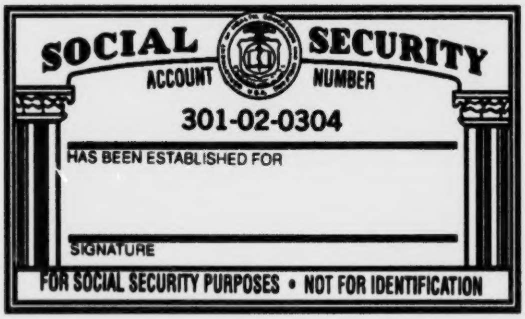
Document Level 1 Scale range: 0 to 225

Tasks in this level tend to require the reader either to locate a piece of information based on a literal match or to enter information from personal knowledge onto a document. Little, if any, distracting information is present.

Average difficulty value of tasks in this level: 195
Percentage of adults performing in this level: 23%

Some of the Level 1 tasks require the reader to match one piece of information in the directive with an identical or synonymous piece of information in the document. For example, readers may be asked to write a piece of personal background information — such as their name or age — in the appropriate place on a document. One task with a difficulty value of 69 directs individuals to look at a Social Security card and sign their name on the line marked "signature." Tasks such as this are quite simple, since only one piece of information is required, it is known to the respondent, and there is only one logical place on the document where it may be entered.

Here is a Social Security card. Sign your name on the line that reads "signature."



SOCIAL SECURITY

ACCOUNT NUMBER

301-02-0304

HAS BEEN ESTABLISHED FOR

SIGNATURE

FOR SOCIAL SECURITY PURPOSES • NOT FOR IDENTIFICATION

Other tasks in this level are slightly more complex. For example, in one task, readers were asked to complete a section of a job application by providing several pieces of information. This was more complicated than the previous task described, since respondents had to conduct a series of one-feature matches. As a result, the difficulty value of this task was higher (193).

You have gone to an employment center for help in finding a job. You know that this center handles many different kinds of jobs. Also, several of your friends who have applied here have found jobs that appeal to you.

The agent has taken your name and address and given you the rest of the form to fill out. Complete the form so the employment center can help you get a job.

Birth date_____________ Age____ Sex: Male____ Female____

Height___________ Weight___________ Health___________

Last grade completed in school______________

Kind of work wanted:

Part-time__________ Summer__________

Full-time__________ Year-round__________

Other tasks in this level ask the reader to locate specific elements in a document that contains a variety of information. In one task, for example, respondents were given a form providing details about a meeting and asked to indicate the date and time of the meeting, which were stated in the form. The difficulty values associated with these tasks were 187 and 180, respectively. The necessary information was referred to only once in the document.

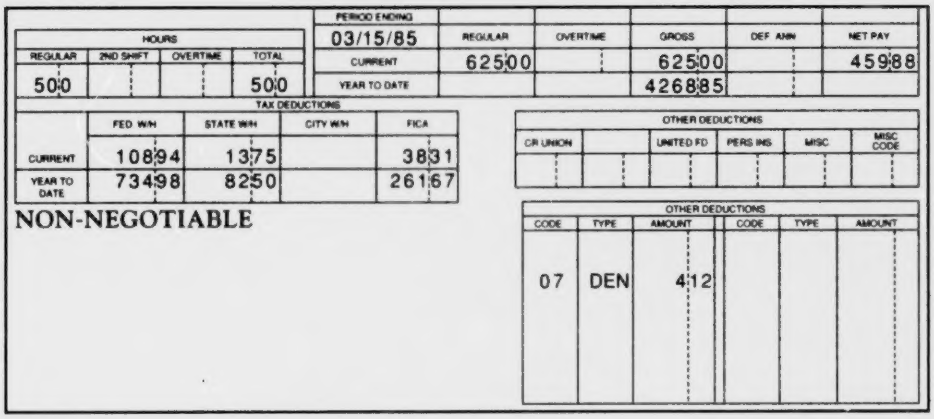
Document Level 2 Scale range: 226 to 275

Tasks in this level are more varied than those in Level 1. Some require the reader to match a single piece of information; however, several distractors may be present, or the match may require low-level inferences. Tasks in this level may also ask the reader to cycle through information in a document or to integrate information from various parts of a document.

Average difficulty value of tasks in this level: 249
Percentage of adults performing in this level: 28%

Some tasks in Level 2 ask readers to match two pieces of information in the text. For example, one task with a difficulty value of 275 directs the respondent to look at a pay stub and to write "the gross pay for this year to date." To perform the task successfully, respondents must match both "gross pay" and "year to date" correctly. If readers fail to match on both features, they are likely to indicate an incorrect amount.

What is the gross pay for this year to date?



HOURS			
REGULAR	2ND SHIFT	OVERTIME	TOTAL
5 00			5 00

PERIOD ENDING					
03/15/85	REGULAR	OVERTIME	GROSS	DEF ANN	NET PAY
CURRENT	625 00		625 00		459 88
YEAR TO DATE			4268 85		

TAX DEDUCTIONS

	FED W/H	STATE W/H	CITY W/H	FICA
CURRENT	108 94	13 75		38 31
YEAR TO DATE	734 98	82 50		261 67

OTHER DEDUCTIONS

CR UNION		UNITED FD	PERS INS	MISC	MISC CODE

OTHER DEDUCTIONS

CODE	TYPE	AMOUNT	CODE	TYPE	AMOUNT
07	DEN	4 12			

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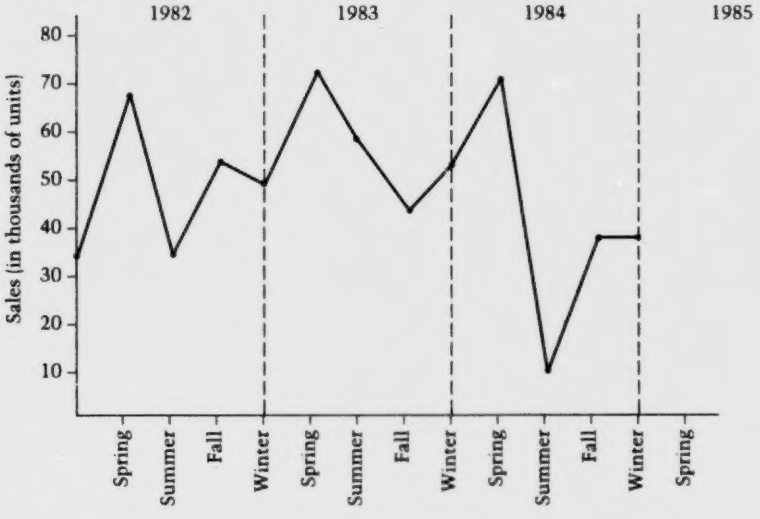
A second question based on this document — What is the current net pay? — was also expected to require readers to make a two-feature match. Accordingly, the difficulty values of the two items were expected to be similar. The task anchored at about the 224 point on the scale, however, and an analysis of the pay stub reveals why its difficulty was lower than that of the previous task. To succeed on the second task, the reader only needs to match on the feature "net pay." Since the term appears only once on the pay stub and there is only one number in the column, this task requires only a one-feature match and receives a difficulty value that lies within the Level 1 range on the document scale.

Tasks in Level 2 may also require the reader to integrate information from different parts of the document by looking for similarities or differences. For example, a task with a difficulty value of 260 asks respondents to study a line graph showing a company's seasonal sales over a three-year period, then predict the level of sales for the following year, based on the seasonal trends shown in the graph.

You are a marketing manager for a small manufacturing firm. This graph shows your company's sales over the last three years. Given the seasonal pattern shown on the graph, predict the sales for Spring 1985 (in thousands) by putting an "x" on the graph.



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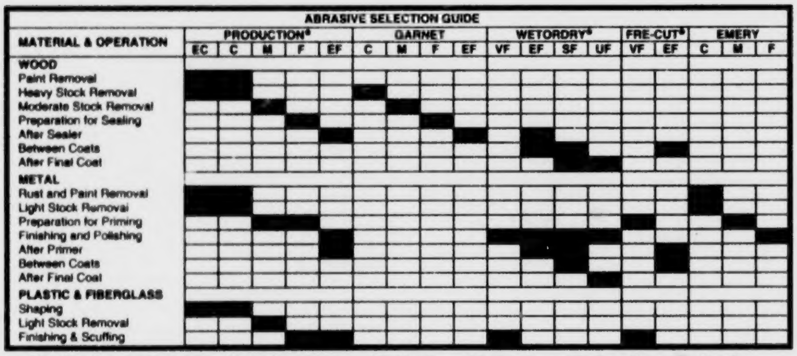
Document Level 3 Scale range: 276 to 325

Some tasks in this level require the reader to integrate multiple pieces of information from one or more documents. Others ask readers to cycle through rather complex tables or graphs which contain information that is irrelevant or inappropriate to the task.

Average difficulty value of tasks in this level: 302
Percentage of adults performing in this level: 31%

Tasks within the range for Level 3 ask the reader to locate particular features in complex displays, such as tables that contain nested information. Typically, distractor information is present in the same row or column as the correct answer. For example, the reader might be asked to use a table that summarizes appropriate uses for a variety of products, and then choose which product to use for a certain project. One such task had a difficulty value of 303. To perform this task successfully, the respondent uses a table containing nested information to determine the type of sandpaper to buy if one needs "to smooth wood in preparation for sealing and plans to buy garnet sandpaper." This task requires matching not only on more than a single feature of information but also on features that are not always superordinate categories in the document. For example, "preparation for sealing" is subordinated or nested under the category "wood," while the type of sandpaper is under the main heading of "garnet." In addition, there are three other types of sandpaper that the reader might select that partially satisfy the directive.

You need to smooth wood in preparation for sealing and plan to buy garnet sandpaper. What type of sandpaper should you buy?



ABRASIVE SELECTION GUIDE

MATERIAL & OPERATION	PRODUCTION®					GARNET				WETORDRY®				FRE-CUT®		EMERY		
	EC	C	M	F	EF	C	M	F	EF	VF	EF	SF	UF	VF	EF	C	M	F
WOOD																		
Paint Removal	■	■																
Heavy Stock Removal	■	■				■												
Moderate Stock Removal			■				■											
Preparation for Sealing				■				■										
After Sealer					■				■		■							
Between Coats											■	■			■			
After Final Coat												■	■					
METAL																		
Rust and Paint Removal	■	■														■		
Light Stock Removal	■	■														■		
Preparation for Priming			■	■										■			■	
Finishing and Polishing					■					■	■	■	■					■
After Primer					■						■	■			■			
Between Coats												■			■			
After Final Coat													■					
PLASTIC & FIBERGLASS																		
Shaping	■	■																
Light Stock Removal			■															
Finishing & Scuffing				■	■					■				■				

EC = Extra Coarse C = Coarse M = Medium F = Fine VF = Very Fine EF = Extra Fine SF = Super Fine UF = Ultra Fine

SAFETY INFORMATION:
- Wear approved safety goggles when sanding.
- Use particle/dust mask or other means to prevent inhalation of sanding dust.
- When using power tools, follow manufacturer's recommended procedures and safety instructions.

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At the same level of difficulty (307), another task directs the reader to a stacked bar graph depicting estimated power consumption by source for four different years. The reader is asked to select an energy source that will provide more power in the year 2000 than it did in 1971. To succeed on this task, the reader must first identify the correct years and then compare each of the five pairs of energy sources given.

Document Level 4 Scale range: 326 to 375

Tasks in this level, like those in the previous levels, ask readers to perform multiple-feature matches, cycle through documents, and integrate information; however, they require a greater degree of inferencing. Many of these tasks require readers to provide numerous responses but do not designate how many responses are needed. Conditional information is also present in the document tasks in this level and must be taken into account by the reader.

Average difficulty value of tasks in this level: 340
Percentage of adults performing in this level: 15%

One task in this level (348) combines many of the variables that contribute to difficulty in Level 4. These include: multiple feature matching, complex displays involving nested information, numerous distractors, and conditional information that must be taken into account in order to arrive at a correct response. Using the bus schedule shown here, readers are asked to select the time of the next bus on a Saturday afternoon, if they miss the 2:35 bus leaving Hancock and Buena Ventura going to Flintridge and Academy. Several departure times are given, from which respondents must choose the correct one.

On Saturday afternoon, if you miss the 2:35 bus leaving Hancock and Buena Ventura going to Flintridge and Academy, how long will you have to wait for the next bus?

ROUTE
5

VISTA GRANDE

This bus line operates Monday through Saturday providing *"local service"* to most neighborhoods in the northeast section.

Buses run thirty minutes apart during the morning and afternoon rush hours Monday through Friday.

Buses run one hour apart at all other times of day and Saturday.

No Sunday, holiday or night service.

	OUTBOUND from Terminal						INBOUND toward Terminal					*You can transfer from this bus to another headed anywhere else in the city bus system*	
	Leave Downtown Terminal	Leave Hancock and Buena Ventura	Leave Citadel	Leave Rustic Hills	Leave North Carefree and Oro Blanco	Arrive Flintridge and Academy	Leave Flintridge and Academy	Leave North Carefree and Oro Blanco	Leave Rustic Hills	Leave Citadel	Leave Hancock and Buena Ventura	Arrive Downtown Terminal	
AM							6:15	6:27	6:42	6:47	6:57	7:15	
							6:45	**6:57**	**7:12**	**7:17**	**7:27**	**7:45**	**Monday through Friday only**
	6:20	6:35	6:45	6:50	7:03	7:15	7:15	7:27	7:42	7:47	7:57	8:15	
	6:50	**7:05**	**7:15**	**7:20**	**7:33**	**7:45**	**7:45**	**7:57**	**8:12**	**8:17**	**8:27**	**8:45**	**Monday through Friday only**
	7:20	7:35	7:45	7:50	8:03	8:15	8:15	8:27	8:42	8:47	8:57	9:15	
	7:50	**8:05**	**8:15**	**8:20**	**8:33**	**8:45**	**8:45**	**8:57**	**9:12**	**9:17**	**9:27**	**9:45**	**Monday through Friday only**
	8:20	8:35	8:45	8:50	9:03	9:15	9:15	9:27	9:42	9:47	9:57	10:15	
	8:50	**9:05**	**9:15**	**9:20**	**9:33**	**9:45**	**9:45**	**9:57**	**10:12**	**10:17**	**10:27**	**10:45**	**Monday through Friday only**
	9:20	9:35	9:45	9:50	10:03	10:15	10:15	10:27	10:42	10:47	10:57	11:15	
	10:20	10:35	10:45	10:50	11:03	11:15	11:15	11:27	11:42	11:47	11:57	12:15	
	11:20	11:35	11:45	11:50	12:03	12:15	12:15	12:27	12:42 p.m.	12:47 p.m.	12:57 p.m.	1:15 p.m.	
PM	12:20	12:35	12:45	12:50	1:03	1:15	1:15	1:27	1:42	1:47	1:57	2:15	
	1:20	1:35	1:45	1:50	2:03	2:15	2:15	2:27	2:42	2:47	2:57	3:15	
	2:20	2:35	2:45	2:50	3:03	3:15	3:15	3:27	3:42	3:47	3:57	4:15	
	2:50	**3:05**	**3:15**	**3:20**	**3:33**	**3:45**	**3:45**	**3:57**	**4:12**	**4:17**	**4:27**	**4:45**	**Monday through Friday only**
	3:20	3:35	3:45	3:50	4:03	4:15	4:15	4:27	4:42	4:47	4:57	5:15	
	3:50	**4:05**	**4:15**	**4:20**	**4:33**	**4:45**	**4:45**	**4:57**	**4:12**	**4:17**	**5:27**	**5:45**	**Monday through Friday only**
	4:20	4:35	4:45	4:50	5:03	5:15	5:15	5:27	5:42	5:47	5:57	6:15	
	4:50	**5:05**	**5:15**	**5:20**	**5:33**	**5:45**	**5:45**	**5:57**	**6:12**	**6:17**	**6:27**	**6:45**	**Monday through Friday only**
	5:20	5:35	5:45	5:50	6:03	6:15							
	5:50	**6:05**	**6:15**	**6:20**	**6:33**	**6:45**							**Monday through Friday only**
	6:20	6:35	6:45	6:50	7:03	7:15							

To be sure of a smooth transfer tell the driver of this buss the name of the second bus you need

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Other tasks involving this bus schedule are found in Level 3. These tasks require the reader to match on fewer features of information and do not involve the use of conditional information.

Document Level 5 Scale range: 376 to 500

Tasks in this level require the reader to search through complex displays that contain multiple distractors, to make high-level text-based inferences, and to use specialized knowledge.

Average difficulty value of tasks in this level: 391
Percentage of adults performing in this level: 3%

A task receiving a difficulty value of 396 involves reading and understanding a table depicting the results from a survey of parents and teachers evaluating parental involvement in their school. Respondents were asked to write a brief paragraph summarizing the results. This particular task requires readers to integrate the information in the table to compare and contrast the viewpoints of parents and teachers on a selected number of school issues.

Using the information in the table, write a brief paragraph summarizing the extent to which parents and teachers agreed or disagreed on the statements about issues pertaining to parental involvement at their school.

Parents and Teachers Evaluate Parental Involvement at Their School

Do you agree or disagree that . . . ?

		Level of School		
	Total	Elementary	Junior High	High School
			percent agreeing	
Our school does a good job of encouraging parental involvement in sports, arts, and other nonsubject areas				
Parents	77	76	74	79
Teachers	77	73	77	85
Our school does a good job of encouraging parental involvement in educational areas				
Parents	73	82	71	64
Teachers	80	84	78	70
Our school only contacts parents when there is a problem with their child				
Parents	55	46	62	63
Teachers	23	18	22	33
Our school does not give parents the opportunity for any meaningful roles				
Parents	22	18	22	28
Teachers	8	8	12	7

Source: The Metropolitan Life Survey of the American Teacher, 1987

Quantitative Literacy

Since adults are often required to perform numerical operations in everyday life, the ability to perform quantitative tasks is another important aspect of literacy. These abilities may seem, at first glance, to be fundamentally different from the types of skills involved in reading prose and documents and, therefore, to extend the concept of literacy beyond its traditional limits. However, research indicates that the processing of printed information plays a critical role in affecting the difficulty of tasks along this scale.[3]

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[3] I.S. Kirsch and A. Jungeblut. (1986). *Literacy: Profiles of America's Young Adults, Final Report*. Princeton, NJ: Educational Testing Service. I.S. Kirsch, A. Jungeblut, and A. Campbell. (1992). *Beyond the School Doors: The Literacy Needs of Job Seekers Served by the U.S. Department of Labor*. Princeton, NJ: Educational Testing Service.

The NALS quantitative literacy scale contains some 43 tasks with difficulty values that range from 191 to 436. The difficulty of these tasks appears to be a function of several factors, including:

- the particular arithmetic operation called for
- the number of operations needed to perform the task
- the extent to which the numbers are embedded in printed materials and
- the extent to which an inference must be made to identify the type of operation to be performed

In general, it appears that many individuals can perform simple arithmetic operations when both the numbers and operations are made explicit. However, when the numbers to be used must be located in and extracted from different types of documents that contain similar but irrelevant information, or when the operations to be used must be inferred from printed directions, the tasks become increasingly difficult.

A detailed discussion of the five levels of quantitative literacy is provided on the following pages.

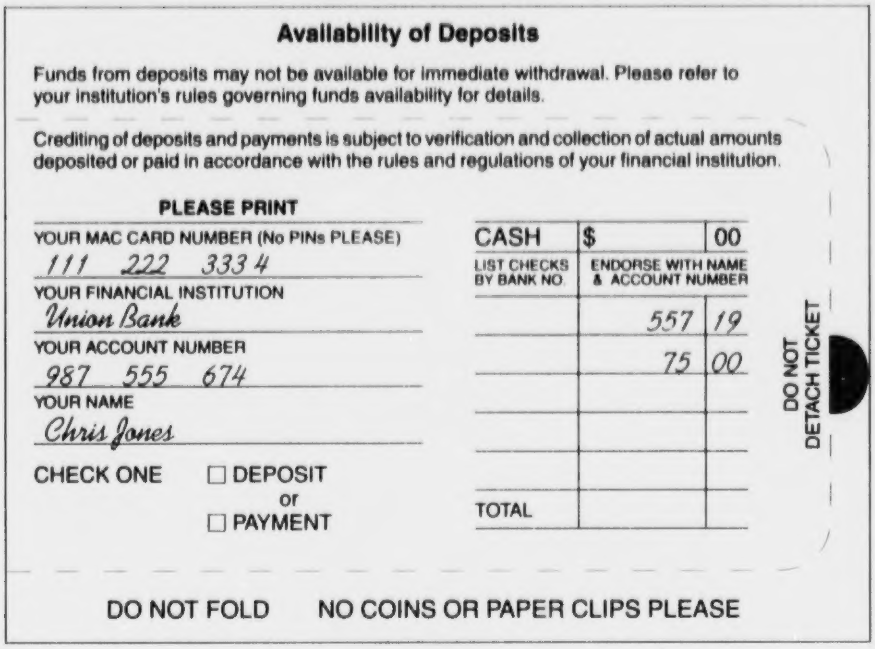
Quantitative Level 1 Scale range: 0 to 225

Tasks in this level require readers to perform single, relatively simple arithmetic operations, such as addition. The numbers to be used are provided and the arithmetic operation to be performed is specified.

Average difficulty value of tasks in this level: 206
Percentage of adults performing in this level: 22%

The least demanding task on the quantitative scale (191) requires the reader to total two numbers on a bank deposit slip. In this task, both the numbers and the arithmetic operation are judged to be easily identified and the operation involves the simple addition of two decimal numbers that are set up in column format.

You wish to use the automatic teller machine at your bank to make a deposit. Figure the total amount of the two checks being deposited. Enter the amount on the form in the space next to TOTAL.



Availability of Deposits

Funds from deposits may not be available for immediate withdrawal. Please refer to your institution's rules governing funds availability for details.

Crediting of deposits and payments is subject to verification and collection of actual amounts deposited or paid in accordance with the rules and regulations of your financial institution.

PLEASE PRINT

YOUR MAC CARD NUMBER (No PINs PLEASE) 111 222 3334

YOUR FINANCIAL INSTITUTION Union Bank

YOUR ACCOUNT NUMBER 987 555 674

YOUR NAME Chris Jones

CHECK ONE ☐ DEPOSIT or ☐ PAYMENT

CASH	$	00
LIST CHECKS BY BANK NO.	ENDORSE WITH NAME & ACCOUNT NUMBER	
	557	19
	75	00
TOTAL		

DO NOT DETACH TICKET

DO NOT FOLD NO COINS OR PAPER CLIPS PLEASE

Quantitative Level 2 Scale range: 226 to 275

Tasks in this level typically require readers to perform a single operation using numbers that are either stated in the task or easily located in the material. The operation to be performed may be stated in the question or easily determined from the format of the material (for example, an order form).

Average difficulty value of tasks in this level: 251
Percentage of adults performing in this level: 25%

In the easier tasks in Level 2, the quantities are also easy to locate. In one such task at 246 on the quantitative scale, the cost of a ticket and bus is given for each of two shows. The reader is directed to determine how much less attending one show will cost in comparison to the other.

The price of one ticket and bus for "Sleuth" costs how much less than the price of one ticket and bus for "On the Town"?

THEATER TRIP

A charter bus will leave from the bus stop (near the Conference Center) at 4 p.m., giving you plenty of time for dinner in New York. Return trip will start from West 45th Street directly following the plays. Both theaters are on West 45th Street. Allow about 1½ hours for the return trip.

Time:	4 p.m., Saturday, November 20		
Price:	"On the Town"	Ticket and bus	$11.00
	"Sleuth"	Ticket and bus	$8.50
Limit:	Two tickets per person		

In a more complex set of tasks, the reader is directed to complete an order form for office supplies using a page from a catalogue. No other specific instructions as to what parts of the form should be completed are given in the directive. One task (difficulty value of 270) requires the reader to use a table on the form to locate the appropriate shipping charges based on the amount of a specified set of office supplies, to enter the correct amount on an order form, and then to calculate the total price of the supplies.

Quantitative Level 3 Scale range: 276 to 325

In tasks in this level, two or more numbers are typically needed to solve the problem, and these must be found in the material. The operation(s) needed can be determined from the arithmetic relation terms used in the question or directive.

Average difficulty value of tasks in this level: 293
Percentage of adults performing in this level: 31%

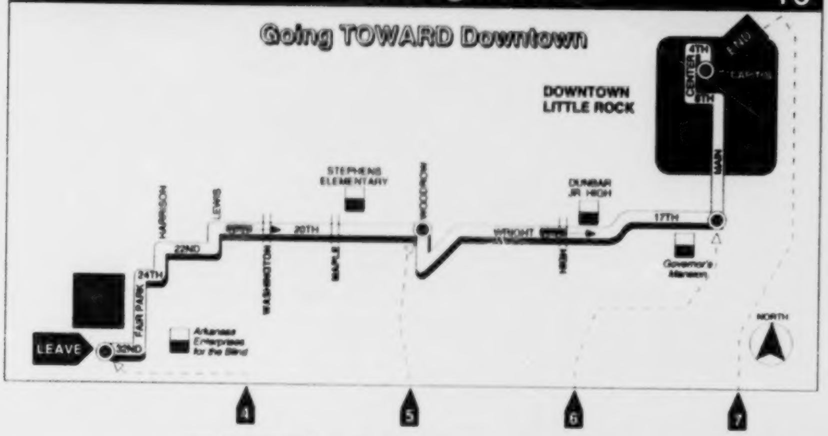
In general, tasks within the range for Level 3 ask the reader to perform a single operation of addition, subtraction, multiplication, or division. However, the operation is not stated explicitly in the directive or made clear by the format of the document. Instead, it must be inferred from the terms used in the directive. These tasks are also more difficult because the reader must locate the numbers in various parts of the document in order to perform the operation.

From a bar graph showing percentages of population growth for two groups across six periods, a task at the 279 point on the scale directs the reader to calculate the difference between the groups for one of the years.

A more difficult task in Level 3 (321) requires the use of a bus schedule to determine how long it takes to travel from one location to another on a Saturday. To respond correctly, the reader must match on several features of information given in the question to locate the appropriate times.

Suppose that you took the 12:45 p.m. bus from U.A.L.R. Student Union to 17th and Main on a Saturday. According to the schedule, how many minutes is the bus ride?

16 South Highland 16


Going TOWARD Downtown
DOWNTOWN LITTLE ROCK
4TH
CENTER
6TH
CAPITOL
END
MAIN
17TH
DUNBAR JR. HIGH
Governor's Mansion
HIGH
WRIGHT
WOODROW
STEPHENS ELEMENTARY
MAPLE
20TH
WASHINGTON
LEWIS
HARRISON
22ND
24TH
FAIR PARK
32ND
LEAVE
Arkansas Enterprises for the Blind
NORTH
4
5
6
7

		BUS LEAVES from U.A.L.R. Student Union	Bus arrives at 20th & Woodrow	Bus arrives at 17th & Main	BUS ENDS at Capitol & Louisiana
WEEKDAYS					
A.M.	♿	5:38	5:51	6:00	6:09
		6:11	6:25	6:35	6:45
	♿	6:41	6:55	7:05	7:15
		7:11	7:25	7:35	7:45
	♿	7:41	7:55	8:05	8:15
		8:11	8:25	8:35	8:45
	♿	8:41	8:55	9:05	9:15
		9:14	9:27	9:36	9:45
	♿	9:44	9:57	10:06	10:15
		10:14	10:27	10:36	10:45
	♿	10:44	10:57	11:06	11:15
		11:14	11:27	11:36	11:45
	♿	11:44	11:57	12:06	12:15
P.M.		12:14	12:27	12:36	12:45
	♿	12:44	12:57	1:06	1:15
		1:14	1:27	1:36	1:45
	♿	1:44	1:57	2:06	2:15
		2:14	2:27	2:36	2:45
	♿	2:44	2:57	3:06	3:15
		3:14	3:27	3:36	3:45
	♿	3:43	3:56	4:05	4:15
		4:13	4:26	4:35	4:45
	♿	4:43	4:56	5:05	5:15
		5:13	5:26	5:35	5:45
	♿	5:45	5:58	6:07	6:17
		6:11	6:22	6:30	–
	♿	6:46	6:57	7:05	–
SATURDAY					
A.M.	♿	5:38	5:51	6:00	6:09
	♿	6:45	6:57	7:06	7:15
	♿	7:45	7:57	8:06	8:15
	♿	8:45	8:57	9:06	9:15
	♿	9:45	9:57	10:06	10:15
	♿	10:45	10:57	11:06	11:15
	♿	11:45	11:57	12:06	12:15
P.M.	♿	12:45	12:57	1:06	1:15
	♿	1:45	1:57	2:06	2:15
	♿	2:45	2:57	3:06	3:15
	♿	3:45	3:57	4:06	4:15
	♿	4:45	4:57	5:06	5:15
	♿	5:45	5:57	6:06	6:15
	♿	6:44	6:56	7:05	–

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Quantitative Level 4 Scale range: 326 to 375

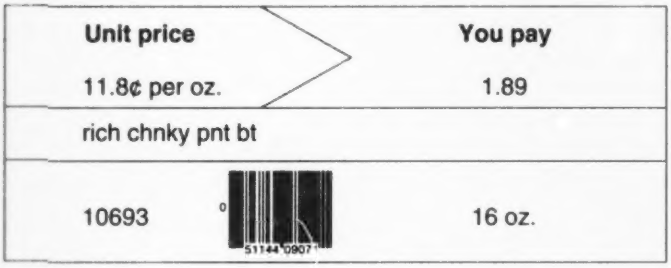
These tasks tend to require readers to perform two or more sequential operations or a single operation in which the quantities are found in different types of displays, or the operations must be inferred from semantic information given or drawn from prior knowledge.

Average difficulty value of tasks in this level: 349
Percentage of adults performing in this level: 17%

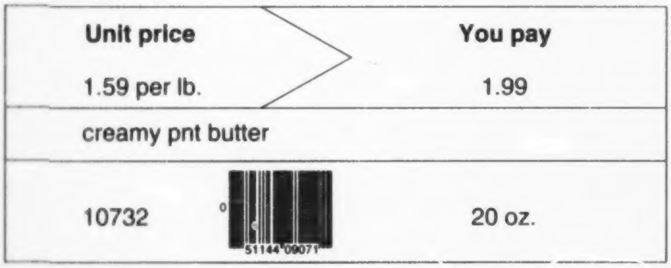
One task in this level, with a difficulty value of 332, asks the reader to estimate, based on information in a news article, how many miles per day a driver covered in a sled-dog race. The respondent must know that to calculate a "per day" rate requires the use of division.

A more difficult task (355) requires the reader to select from two unit price labels to estimate the cost per ounce of creamy peanut butter. To perform this task successfully, readers may have to draw some information from prior knowledge.

Estimate the cost per ounce of the creamy peanut butter. Write your estimate on the line provided.



Unit price **You pay**
11.8¢ per oz. 1.89
rich chnky pnt bt
10693 0 51144 09071 16 oz.



Unit price **You pay**
1.59 per lb. 1.99
creamy pnt butter
10732 0 51144 09071 20 oz.

Quantitative Level 5 Scale range: 376 to 500

These tasks require readers to perform multiple operations sequentially. They must disembed the features of the problem from text or rely on background knowledge to determine the quantities or operations needed.

Average difficulty value of tasks in this level: 411
Percentage of adults performing in this level: 4%

One of the most difficult tasks on the quantitative scale (433) requires readers to look at an advertisement for a home equity loan and then, using the information given, explain how they would calculate the total amount of interest charges associated with the loan.

You need to borrow $10,000. Find the ad for Home Equity Loans on page 2 in the newspaper provided. Explain to the interviewer how you would compute the total amount of interest charges you would pay under this loan plan. Please tell the interviewer when you are ready to begin.

FIXED RATE • FIXED TERM

HOME EQUITY LOANS

14.25%

Annual Percentage Rate
Ten Year Term

SAMPLE MONTHLY REPAYMENT SCHEDULE

Amount Financed	Monthly Payment
$10,000	$156.77
$25,000	$391.93
$40,000	$627.09

120 Months 14.25% APR

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Successful Task Performance across the Literacy Levels

The main purpose of the literacy scales is to summarize how well adults can perform on the full array of tasks in the assessment. The difficulty of the assessment tasks increases proportionally with the progression of information-processing demands across the scales. The literacy levels provide a way not only to explore this progression, but also to explore the likelihood that individuals in each level will succeed on tasks of varying difficulty.

The following graphs (Figure A.2) display the probability that individuals performing at selected points on each scale will give a correct response to tasks with varying difficulty values. For example, a person whose prose proficiency is 150 has less than a 50 percent chance of giving a correct response to an average prose task in Level 1, where the average task difficulty is 198. Individuals whose scores were at the 200 point, on the other hand, have an almost 80 percent probability of responding correctly to these tasks.

In terms of task demands, adults performing at the 200 point on the prose scale are likely to be able to locate a single piece of information in a brief piece of text where there is no distracting information, or when any distracting information is located apart from the desired information. They are likely to have far more difficulty with the types of tasks that occur in Levels 2 through 5, however. For example, they would have only about a 30 percent chance of performing the average task in Level 2 correctly, where the average task difficulty value is 259, and only about a 10 percent chance of success, or less, on the more challenging tasks found in Levels 3, 4, and 5.

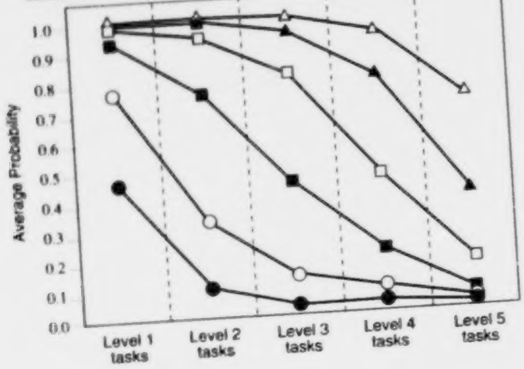
In contrast, readers at the 300 point on the prose scale have more than an 80 percent probability of success on tasks in Levels 1 and 2, and have close to an 80 percent likelihood of success on tasks in Level 3, where the average task difficulty value is 298. This means that they demonstrate consistent success identifying information in fairly dense text without organizational aids. They can also consistently integrate, compare, and contrast information that is easily identified in the text. On the other hand, they are likely not to have mastered tasks that require them to make higher level inferences, to take conditional information into account, and to use specialized knowledge. The probabilities of their successfully performing these Level 4 tasks, where the average task difficulty value is 352, are just under 50 percent, and on the Level 5 tasks their likelihood of responding correctly falls to less than 20 percent.

Similar interpretations can be made using the performance results on the document and quantitative scales. For example, an individual with a proficiency of 150 on the document scale is estimated to have less than a 50 percent chance of responding correctly to tasks in Level 1, where the average task difficulty value is 195, and less than a 30 percent chance of responding

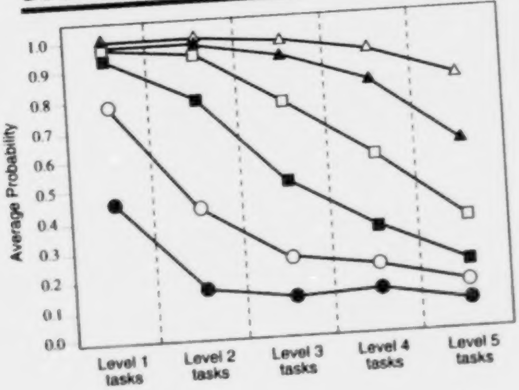
NALS

Average Probabilities of Successful Performance by Individuals with Selected Proficiency Scores on the Tasks in Each Literacy Level

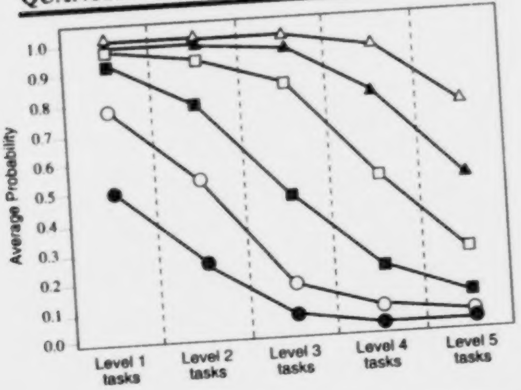
PROSE



DOCUMENT



QUANTITATIVE



Adults' Proficiency Scores: 150 ● 200 ○ 250 ■ 300 □ 350 ▲ 400 △

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

correctly to tasks in each of the higher levels. On the quantitative literacy scale, adults with a proficiency of 150 are estimated to have only a 50 percent chance of responding correctly to an average document task in Level 1, where the average task difficulty is 206, and less than a 30 percent chance of responding correctly to tasks in the other levels. Such individuals demonstrate little or no proficiency in performing the range of quantitative tasks found in this assessment. In contrast, adults with a quantitative score of 300 exceed the 80 percent criterion for the average tasks in Levels 1 and 2 and meet the 80 percent criterion for many of the tasks in Level 3. They can be expected to encounter more difficulty with quantitative tasks in Levels 4 and 5.

Missing Responses to Literacy Tasks

In any educational, social, or political opinion survey, missing responses are always present. Sometimes missing data can be ignored when tabulating and reporting survey results. If the reasons the data are missing are related to the outcome of the study, however, the missing responses will bias the results unless some adjustment can be made to counter the bias. In this survey, there were reasons to believe that the literacy performance data were missing more often for adults with lower levels of literacy than for adults with higher levels. Field test evidence and experience with surveys indicated that adults with lower levels of literacy would be more likely than adults with higher proficiencies either to decline to respond to the survey at all or to begin the assessment but not to complete it. Ignoring the pattern of missing data would have resulted in overestimating the literacy skills of adults in the United States.

For this survey, several procedures were developed to reduce biases due to nonresponse, based on how much of the survey the respondent completed.[3] Individuals who refused to participate in the survey before any information about them was collected were omitted from the analyses. Because they were unlikely to know that the survey intended to assess their literacy, it was assumed that their reason for refusing was not related to their level of literacy skills.

Some individuals began the interview, but stopped before they completed at least five tasks on each literacy scale.[4] The interviewers were trained to record accurately their reasons for stopping. The reasons were subsequently classified as either related or unrelated to literacy skills. Literacy-related reasons included difficulty with reading or writing, inability to read or write in English, and mental or learning disabilities. Reasons unrelated to literacy included physical disabilities, time conflicts, and interruptions. Some adults gave no reason for stopping the assessment.

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[3] For a full discussion of the procedures used in scoring, scaling, weighting, and handling nonresponse problems, see the forthcoming *Technical Report of the 1992 National Adult Literacy Survey*.

[4] Five was the minimum number of completed tasks needed for accurate proficiency estimation. No special procedures were needed to estimate the proficiencies of those who broke off the assessment after attempting five or more tasks on each scale.

Overall, 88 percent of respondents completed the assessment (at least five tasks on each literacy scale). Twelve percent started the survey but stopped before completing five tasks. About half of these individuals, or 6 percent of the adult population, did not complete the assessment for reasons related to their literacy skills, while the other 6 percent did not complete it for reasons unrelated to literacy or for no stated reason.

The missing data were treated differently depending on whether nonrespondents' reasons were related or unrelated to their literacy skills. The missing responses of those who gave literacy-related reasons for terminating the assessment were treated as wrong answers, based on the assumption that they could not have correctly completed the literacy tasks. The missing responses of those who broke off the assessment for no stated reason or for reasons unrelated to literacy were essentially ignored, since it could not be assumed that their answers would have been either correct or incorrect. The proficiencies of such respondents were inferred from the performance of other adults with similar characteristics.

Table A.1 shows the proficiency scores resulting from these procedures. Adults who completed the assessment had average proficiencies ranging from 279 to 285 on the three literacy scales. Because the missing responses of adults who did not complete the assessment for reasons related to literacy were treated as wrong answers, the average scores of these adults were considerably lower, ranging from 114 to 124. Nearly all adults who terminated the assessment for literacy-related reasons scored in the Level 1 range (below 225). Adults who stopped for other reasons or for unstated reasons had scores between those of the other two groups, ranging from 228 to 237. These adults were not found only in the lowest literacy level, but were distributed across the five levels.

It is likely that there were some errors in classifying nonrespondents' reasons for not completing the assessment. Some adults may have given an explanation that reflected badly on their literacy skills simply because they found completing the assessment too burdensome. Perhaps they could have performed better if they had they tried harder. The assumption that such adults are unable to succeed with the literacy tasks may be too strong, and the assignment of wrong answers may underestimate their skills. Other adults may have anticipated failure in the assessment, yet concealed their lack of literacy

Table A.1: Percentages and average proficiencies of adults on each scale, by assessment completion status

		Literacy scale		
		Prose	Document	Quantitative
Assessment completion status	CPCT	PROF (se)	PROF (se)	PROF (se)
Total	100	272 (0.6)	267 (0.7)	271 (0.7)
Completed assessment	88	285 (0.6)	279 (0.6)	284 (0.6)
Did not complete assessment for literacy-related reasons	6	124 (1.5)	116 (1.4)	114 (1.9)
Did not complete assessment for reasons unrelated to literacy	6	237 (3.0)	228 (2.8)	231 (3.6)

Notes: CPCT = column percentage; PROF = average proficiency; se = standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

skills by citing other reasons for not responding, or by refusing to explain their reason. The assumption that these adults are just like others in their demographic group may also be too strong, and the failure to assign wrong answers may overestimate their skills. To some extent the errors can be expected to counterbalance one another, but the available data are insufficient to assess which kind of classification error occurred more often.

Performance in the Lowest Literacy Level

Level 1 is somewhat different from the other literacy levels. For Levels 2 through 5, adults who can consistently perform the tasks in a given level (that is, at least 80 percent of the time) are said to perform in that level. For example, adults in Level 2 have a high probability of success on the tasks in that level, and more than an 80 percent likelihood of success on the Level 1 tasks. Likewise, adults in Level 3 have a high probability of success on the tasks in that level, as well as on the tasks in Levels 1 and 2.

Level 1, on the other hand, includes adults with a wide range of literacy skills, including some who performed the Level 1 tasks consistently and others who did not. Individuals who do not have an 80 percent probability of success with Level 1 tasks are still grouped in Level 1. Thus, some but not all adults in this level met the relatively undemanding requirements of the Level 1 tasks. This section describes how many adults in Level 1 did not meet the demands of the tasks in this level.

The failure to perform correctly at least one of the literacy tasks can be taken as an indicator of not being able to meet the demands of tasks in Level 1. Table A.2 provides information on the size of the groups that met or did not meet the relatively undemanding requirements of the Level 1 tasks.

Most adults in the lowest literacy level on each scale performed at least one literacy task correctly. Nearly three-quarters (72 percent) of adults in Level 1 on the prose scale performed at least one task correctly, as did 83 percent of those in Level 1 on the document scale and 66 percent of those in Level 1 on the quantitative scale. The difference in performance among the scales occurs because the least difficult document task had a value of 68, while the least difficult prose task had a value of 149 and the least difficult quantitative task had a value of 191.

Table A.2: Percentages and average proficiencies on each scale of adults in Level 1

	Literacy scale					
	Prose		Document		Quantitative	
Performance	CPCT	PROF	CPCT	PROF	CPCT	PROF
Total in Level 1	100	173	100	172	100	167
At least one task correct	72	190	83	182	66	190
No tasks correct	21	113	11	94	26	110
No performance data	7	177	6	177	8	159

Notes: CPCT = column percentage; PROF = average proficiency.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

A small proportion of adults in Level 1 did not perform any literacy tasks correctly. Some of these adults completed the survey, while others did not for literacy-related or other reasons. Those who did not succeed on any literacy tasks constitute 21 percent of adults in Level 1 on the prose scale, 11 percent of adults in Level 1 on the document scale, and 26 percent of adults in Level 1 on the quantitative scale. There are wide disparities in average proficiencies between those who performed at least one task correctly (182 to 190 across the scales) and those who did not (94 to 113 across the scales).

For some adults in Level 1 (6 to 8 percent) there are no literacy performance data because they did not respond to any of the literacy tasks for reasons unrelated to their literacy skills or for unknown reasons. These persons could not be described as either meeting or failing to meet the demands of the literacy tasks, so they are distinguished as a separate group. Their proficiencies were inferred from the performance of other adults with similar demographic backgrounds and fell in the middle range between the other two groups. Nearly all adults who correctly responded to at least one literacy task also completed the assessment. Still, some adults broke off the assessment after already having shown some initial success. Table A.3 divides adults in Level 1 who were successful with at least one task into two groups: those who completed the assessment (at least five literacy tasks) and those who did not.

Across the scales, from 83 to 90 percent of those in Level 1 who correctly responded to at least one task also completed the assessment. Their average scores ranged from 192 to 196. The remainder (10 to 17 percent) performed at least one task correctly before breaking off the assessment. Their average scores were much lower, ranging from 132 to 153.

Table A.3: Percentages and average proficiencies of adults in Level 1 with at least one task correct, by assessment completion status

	Literacy scale					
	Prose		Document		Quantitative	
Completion status	CPCT	PROF	CPCT	PROF	CPCT	PROF
Total in Level 1 with at least one task correct	100	190	100	182	100	190
Completed assessment	87	196	83	192	90	194
Did not complete assessment	13	153	17	132	10	153

Notes: CPCT = column percentage; PROF = average proficiency.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

The population of adults who scored in Level 1 on each scale includes not only those who demonstrated success with at least some of the tasks in Level 1 — who constituted the majority — but also those who did not succeed with any of the tasks in this level. Nearly all of those in Level 1 who did not perform any literacy tasks correctly also failed to complete the assessment (86 to 98 percent), as shown in table A.4. Their average scores range from 93 to 107 across the scales. Most of these adults either did not start or broke off the assessment for literacy-related reasons, so that any literacy tasks that remained unanswered were treated as incorrect.

Table A.4: Percentages and average proficiencies of adults in Level 1 with no tasks correct, by assessment completion status

	Literacy scale					
	Prose		Document		Quantitative	
Completion status	CPCT	PROF	CPCT	PROF	CPCT	PROF
Total in Level 1 with no tasks correct	100	113	100	94	100	110
Completed assessment	14	148	2	----	14	146
Did not complete assessment	86	107	98	93	86	98

Notes: CPCT = column percentage; PROF = average proficiency.
---- indicates that the cell size is too small to provide reliable proficiency estimates.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

Two to 14 percent of the adults in Level 1 who did not succeed on any of the literacy tasks did, in fact, complete the assessment. Their average scores were 148 on the prose scale and 146 on the quantitative scale; too few cases were available to estimate an average document score.

The pattern of Level 1 proficiencies associated with various combinations of missing and incorrect answers shows the consequences of including, rather than excluding, adults who did not complete the assessment for literacy-related reasons. In general, the very low scores of these adults bring down the average for any group in which they are a significant component. Omitting these persons from the assessment would have resulted in inflated estimates of the literacy skills of the adult population overall and particularly of certain subgroups.

Population Diversity within the Lowest Literacy Level

Certain populations of adults were disproportionately likely not to meet the demands of the Level 1 tasks. This section describes the characteristics of adults in Level 1 who did not meet the relatively undemanding requirements of the tasks in this level. Tables A.5P, D, and Q provide information on the demographic composition of the total adult population in this country, of adults in Level 1 on each literacy scale, and of those adults in Level 1 who did not succeed on any of the assessment tasks.

Table A.5P: Percentages of adults in selected groups, by membership in total U.S. population, in Level 1, and in Level 1 with no tasks correct

	Prose scale		
	Total U.S. population	Level 1 population	Level 1 no tasks correct
Population group	CPCT	CPCT	CPCT
Weighted sample size (in millions)	191.3	40.0	8.2
Country of birth			
Born in another country	10	25 (1.3)	55 (2.2)
Highest level of education			
0 to 8 years	10	35 (1.6)	61 (2.3)
9 to 12 years	13	27 (1.3)	17 (1.5)
HS diploma or GED	30	24 (1.4)	14 (1.5)
Race/Ethnicity			
White	76	51 (0.6)	29 (2.3)
Black	11	20 (1.0)	15 (1.4)
Hispanic	10	23 (1.4)	49 (2.1)
Asian/Pacific Islander	2	4 (3.9)	5 (0.9)
Age			
16 to 24 years	18	13 (0.8)	10 (1.2)
65 years and older	16	33 (1.5)	28 (1.8)
Disability or condition			
Any condition	12	26 (1.0)	26 (1.7)
Visual difficulty	7	19 (1.5)	20 (1.5)
Hearing difficulty	7	13 (1.6)	13 (2.0)
Learning disability	3	9 (2.1)	15 (1.4)

Notes: CPCT = column percentage; se = standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

Table A.5D: Percentages of adults in selected groups, by membership in total U.S. population, in Level 1, and in Level 1 with no tasks correct

	Document scale		
	Total U.S. population	Level 1 population	Level 1 no tasks correct
Population group	CPCT	CPCT	CPCT
Weighted sample size (in millions)	191.3	44.0	4.7
Country of birth			
Born in another country	10	22 (1.3)	67 (3.2)
Highest level of education			
0 to 8 years	10	33 (1.5)	65 (3.1)
9 to 12 years	13	26 (1.5)	12 (1.7)
HS diploma or GED	30	26 (1.7)	13 (2.1)
Race/Ethnicity			
White	76	54 (0.7)	21 (3.0)
Black	11	20 (0.9)	9 (1.1)
Hispanic	10	21 (1.7)	62 (3.2)
Asian/Pacific Islander	2	3 (3.2)	5 (1.6)
Age			
16 to 24 years	18	11 (0.6)	11 (1.8)
65 years and older	16	35 (1.5)	25 (2.2)
Disability or condition			
Any condition	12	26 (1.2)	22 (2.5)
Visual difficulty	7	18 (1.3)	17 (2.3)
Hearing difficulty	7	13 (2.0)	12 (2.0)
Learning disability	3	8 (2.3)	14 (1.6)

Notes: CPCT = column percentage; se = standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

While 10 percent of the adult population reported that they were born in another country, from 22 to 25 percent of the individuals who performed in Level 1 on the three scales and 54 to 67 percent of those in Level 1 who did not perform any tasks correctly were foreign born. Some of these individuals were undoubtedly recent immigrants with a limited command of English.

Table A.5Q: Percentages of adults in selected groups, by membership in total U.S. population, in Level 1, and in Level 1 with no tasks correct

	Quantitative scale		
	Total U.S. population	Level 1 population	Level 1 no tasks correct
Population group	CPCT	CPCT	CPCT
Weighted sample size (in millions)	191.3	42.0	10.6
Country of birth			
Born in another country	10	22 (1.2)	54 (2.0)
Highest level of education			
0 to 8 years	10	33 (1.6)	58 (2.5)
9 to 12 years	13	27 (1.5)	20 (1.5)
HS diploma or GED	30	25 (1.6)	13 (1.3)
Race/Ethnicity			
White	76	50 (0.5)	34 (2.2)
Black	11	23 (0.9)	19 (1.2)
Hispanic	10	22 (1.3)	40 (1.9)
Asian/Pacific Islander	2	3 (3.6)	5 (0.9)
Age			
16 to 24 years	18	14 (0.8)	10 (0.9)
65 years and older	16	32 (1.5)	32 (1.7)
Disability or condition			
Any condition	12	26 (1.2)	28 (1.4)
Visual difficulty	7	19 (1.4)	21 (1.4)
Hearing difficulty	7	12 (2.1)	13 (1.5)
Learning disability	3	8 (2.7)	15 (1.0)

Notes: CPCT = column percentage; se = standard error.

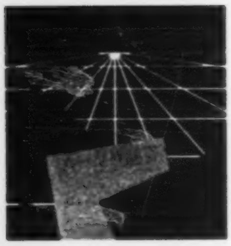
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

Adults who did not complete high school were also disproportionately represented at the low end of the literacy scales. While 23 percent of the adult population reported that they had not completed high school, 59 to 62 percent of adults who performed in Level 1 on the three scales and 77 to 78 percent of those in Level 1 with no tasks correct said they had not completed high school or its equivalent.

Relatively high percentages of the respondents in Level 1 were Black, Hispanic, or Asian/Pacific Islander. The largest group among those who did not perform any tasks correctly were Hispanic. Hispanics and Asian/Pacific Islanders are more likely than others to be recent immigrants with a limited command of English.

Older adults were overrepresented in the Level 1 population as well as in the population of adults who did not meet the demands of the Level 1 tasks. While 16 percent of the total U.S. population was age 65 or older, approximately one-third of the Level 1 population and 25 to 32 percent of the adults in Level 1 who performed no literacy tasks correctly were in this age group. In contrast, compared with their representation in the total U.S. population (18 percent), younger adults were underrepresented in Level 1 (11 to 14 percent) and in the subgroup of Level 1 that did not succeed on any of the literacy tasks (10 to 11 percent).

Disabilities are sometimes associated with low literacy performance. While 12 percent of the adult population reported having a physical, mental, or health condition that kept them from participating fully in work and other activities, 26 percent of adults who performed in Level 1 and 22 to 28 percent of those in Level 1 who did not succeed on any of the literacy tasks had such conditions. Further, while only 3 percent of the U.S. population reported having a learning disability, 8 to 9 percent of the adults who performed in Level 1 on the prose, document, and quantitative scales and 14 to 15 percent of those in Level 1 who did not succeed on any task had this type of disability.
These results show that adults in some population groups were disproportionately likely to perform in the lowest literacy level, and among those who performed in this level, were disproportionately likely not to succeed on any of the literacy tasks in the assessment.



APPENDIX B

Tables

NALS Table B.1

Average Years of Schooling of Inmates, by Number of Times Recidivated

PRIOR SENTENCE	n	WGT N (/1,000)	MEAN	STANDARD ERROR
Probation				
None	448	284	11.1	0.1
1 time	327	222	10.6	0.1
2 times	192	128	10.9	0.2
3 or more times	161	107	10.8	0.2
Incarceration				
None	426	265	11.1	0.1
1 time	231	155	10.7	0.2
2 times	148	102	11.0	0.1
3 or more times	318	215	10.7	0.1
Probation and/or Incarceration				
None	267	162	11.3	0.2
1 time	182	123	10.7	0.2
2 times	173	115	10.7	0.2
3 or more times	504	339	10.8	0.1

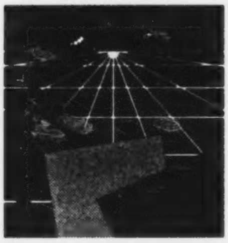
Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

NALS Table B.2

Percentages of Inmates Reporting Number of Times on Probation, by Employment Status

NUMBER OF TIMES OF PROBATION		EMPLOYMENT STATUS			
	Total	Employed full-time	Employed part-time	Looking for work	Not looking for work
None	100.0	60.8	11.6	13.8	13.8
1	100.0	55.1	12.3	17.3	15.3
2	100.0	52.9	12.2	17.9	17.0
3 or more	100.0	47.8	11.7	18.3	22.2

Source: U.S. Department of Justice, Bureau of Justice Statistics, Survey of Inmates in State Correctional Facilities, 1991.



APPENDIX C

Overview of Procedures Used in the National Adult Literacy Survey

This appendix provides information about the methods and procedures used in the National Adult Literacy Survey. The forthcoming technical report will provide more extensive information about procedures. In addition, more detailed information on the development of the background questionnaires and literacy tasks can be found in *Assessing Literacy*.[1]

Sampling

The National and State Adult Literacy Surveys included the following three components: a national household sample, 11 individual state household samples, and a national prison sample. The national and state household components were based on a four-stage stratified area sample with the following stages: the selection of Primary Sampling Units (PSUs) consisting of counties or groups of counties, the selection of segments consisting of census blocks or groups of blocks, the selection of households, and the selection of age-eligible individuals. One national area sample was drawn for the national component; 11 independent, state-specific area samples were drawn for the 11 states participating in the state component (i.e., California, Illinois, Indiana, Iowa, Louisiana, New Jersey, New York, Ohio, Pennsylvania, Texas, Washington.) The sample designs used for all 12 samples were similar, except for two principal differences. In the national sample, Black and Hispanic respondents were sampled at a higher rate than the remainder of the population in order to increase their representation in the sample, whereas the state samples used no oversampling. Also, the target population for the national sample consisted of adults 16 years of age or older, whereas the target population for the state samples consisted of adults 16 to 64 years of age.

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[1] A. Campbell, I. Kirsch, and A. Kolstad. (1992). *Assessing Literacy: The Framework for the National Adult Literacy Survey.* Washington, DC: Government Printing Office.

The sample designs for all 12 household samples involved four stages of selection, each at a successively finer level of geographic detail. The first stage of sampling involved the selection of PSUs, which consist of counties or groups of counties. The PSUs were stratified on the basis of region, metropolitan status, percent Black, percent Hispanic, and, whenever possible, per capita income. The national component used the WESTAT 100 PSU master sample with the Honolulu, Hawaii PSU added to the sample with certainty, to make 101 PSUs in total. The national frame of PSUs was used to construct individual state frames for the state component and a sample of eight to 12 PSUs was selected within each of the given states. All PSUs were selected with probability proportional to the PSU's 1990 population.

The second stage of sampling involved the selection of segments (within the selected PSUs) which consist of census blocks or groups of census blocks. The segments were selected with probability proportional to size where the measure of size for a segment was a function of the number of year-round housing units within the segment. The oversampling of Black and Hispanic respondents for the national component was carried out at the segment level, where segments were classified as high minority (segments with more than 25 percent Black or Hispanic population) or not high minority. The measure of size for high minority segments was defined as the number of White non-Hispanic households plus three times the number of Black or Hispanic households. High minority segments were therefore oversampled at up to three times the rate of comparable, non-highminority segments. The measure of size for nonminority segments was simply the number of year-round housing units within the segment, as was the measure of size for all segments in the state components. One in 7 of the national component segments was selected at random to be included in a "no incentive" sample. Respondents from the remaining segments in the national component received a monetary incentive for participation, as did respondents in the state component. (Respondents from the "no incentive" segments are not included in the household sample of this report.)

The third stage of sampling involved the selection of households within the selected segments. Westat field staff visited all selected segments and prepared lists of all housing units within the boundaries of each segment as determined by the 1990 census block maps. The lists were used to construct the sampling frame for households. Households were selected with equal probability within each segment, except for White non-Hispanic households in high minority segments in the national component, which were subsampled so that the sampling rates for White non-Hispanic respondents would be about the same overall.

The fourth stage of sampling involved the selection of one or two adults within each selected household. A list of age-eligible household members (16 and older for the national component, 16 to 64 for the state component) was constructed for each selected household. One person was selected at random from households with fewer than four eligible members; two persons were selected from households with four or more eligible members. The interviewers, who were instructed to list the eligible household members in descending order by age, then identified one or two household members to interview, based on computer-generated sampling messages that were attached to each questionnaire in advance.

The sample design for the prison component involved two stages of selection. The first stage of sampling involved the selection of state or federal correctional facilities with probability proportional to size, where the measure of size for a given facility was equal to the inmate population. The second stage involved the selection of inmates within each selected facility. Inmates were selected with a probability inversely proportional to their facility's inmate population (up to a maximum of 22 interviews in a facility) so that the product of the first and second stage probabilities would be constant.

Weighting

Full sample and replicate weights were calculated for each record in order to facilitate the calculation of unbiased estimates and their standard errors. The full sample and replicate weights for the household components were calculated as the product of the base weight for a record and a compositing and raking factor. Demographic variables critical to the weighting were recoded and imputed, if necessary, prior to the calculation of base weights.

The base weight was calculated as the reciprocal of the final probability of selection for a respondent, which reflected all stages of sampling. The base weight was then multiplied by a compositing factor which combined the national and state component data in an optimal manner, considering the differences in sample design, sample size, and sampling error between the two components. Twelve different compositing factors were used, one for each of the 11 participating states, and a pseudo factor (equal to one) for all national component records from outside the 11 participating states. The product of the base weight and compositing factor for a given record was the composite weight.

The composite weights were raked so that several totals calculated with the resulting full sample weights would agree with the 1990 census totals, adjusted for undercount. The cells used for the raking were defined to the finest combination of age, education level, race, and ethnicity that the data would allow. Raking adjustment factors were calculated separately for each of the 11 states and then for the remainder of the United States. The above procedures were repeated for 60 strategically constructed subsets of the sample to create a set of replicate weights to be used for variance estimation using the jackknife method. The replication scheme was designed to produce stable estimates of standard errors for national estimates as well as for the 11 individual states.

The full sample and replicate weights for the incarcerated component were calculated as the product of the base weight for a record and a nonresponse and raking factor. The base weight was calculated as the reciprocal of the final probability of selection for a respondent, which reflected both stages of sampling. The base weights were then nonresponse adjusted to reflect both facility and inmate nonresponse. The resulting nonresponse adjusted weights were then raked to agree with independent estimates for certain subgroups of the population.

Background Questionnaires

One of the primary goals of the National Adult Literacy Survey is to relate the literacy skills of the nation's adults to a variety of demographic characteristics and explanatory variables. Accordingly, survey respondents were asked to complete background questionnaires designed to gather information on their characteristics and experiences. To ensure standardized administration, the questionnaires were read to the respondent by trained interviewers.

As recommended by the Literacy Definition Committee, the development of the background questionnaire was guided by two goals: to ensure the usefulness of the data by addressing issues of concern, and to ensure comparability with the young adult and Department of Labor (DOL) job-seeker surveys by including some of the same questions. With these goals in mind, the background questionnaire addressed the following areas:

- general and language background
- educational background and experiences
- political and social participation
- labor force participation
- literacy activities and collaboration
- demographic information

Questions in the first category asked survey participants to provide information on their country of birth, their education before coming to the United States, language(s) spoken by others at home, language(s) spoken while growing up, language(s) spoken now, participation in English as a Second Language courses, and self-evaluated proficiency in English and other languages. This information makes it possible to interpret the performance results in light of the increasing racial/ethnic and cultural diversity in the United States.

The questions on educational background and experiences asked respondents to provide information on the highest grade or level of education they had completed; their reasons for not completing high school; whether or not they had completed a high school equivalency program; their educational aspirations; the types and duration of training they had received in addition to traditional schooling; the school, home, or work contexts in which they learned various literacy skills; and any physical, mental, or health conditions they have that may affect their literacy skills. Information on respondents' education is particularly important because level of education is known to be a predictor of performance on the prose, document, and quantitative literacy scales.

The questions on political and social participation asked participants about the sources from which they get information, their television viewing practices, their use of library services, and whether or not they had voted in a recent election. Because an informed citizenry is essential to the democratic process, information was collected on how adults keep abreast of current events and public affairs. Information on adults' use of library services is also important, because libraries promote reading and often provide literacy programs. These questions make it possible to explore connections between adults' activities and their demonstrated literacy proficiencies.

The questions on labor force participation asked participants to provide information on their employment status, weekly wages or salary, weeks of employment in the past year, annual earnings, and the industry or occupation in which they work(ed). These questions respond to concerns that the literacy skills of our present and future work force are inadequate to compete in the global economy or to cope with our increasingly technological society. The questions were based on labor force concepts widely used in economic surveys and permit the exploration of a variety of labor market activity and experience variables.

Questions on literacy activities and collaboration covered several important areas. Some of the questions focused on the types of materials that adults read, such as newspapers, magazines, books, and brief documents, making it possible to investigate the relationship between reading practices and demonstrated literacy proficiencies. Another set of questions asked respondents about the frequency of particular reading, writing, and mathematics activities. Respondents were asked to provide information on their newspaper, magazine, and book reading practices; reading, writing, and mathematics activities engaged in for personal use and for work; and assistance received from others with particular literacy tasks.

Finally, the survey collected information on respondents' race/ethnicity, age, and gender, as well as the educational attainment of their parents, their marital status, the number of people in their family who were employed full-time and part-time, sources of income other than employment, and family and personal income from all sources. This demographic information enabled researchers to analyze the characteristics of the adult population, as well as to investigate the literacy proficiencies of major subpopulations of interest, such as racial/ethnic groups, males and females, and various age cohorts.

Because some questions included in the household survey were inappropriate for the prison population, a revised version of the background questionnaire was developed for these respondents. Most of the questions in the household background questionnaire on general and language background and on literacy activities and collaboration were included. Many questions concerning education, political and social participation, labor force participation, family income, and employment status were not appropriate, however, and were omitted. In their place, relevant questions were incorporated from the 1991 Survey of Inmates of State Correctional Facilities, sponsored by the Bureau of Justice Statistics of the U.S. Department of Justice.

As a result of these changes, the questionnaire for the prison population addressed the following topics:

- general and language background
- educational background and experiences
- current offenses and criminal history
- prison work assignments and labor force participation
- literacy activities and collaboration
- demographic information

The information collected through these questions makes it possible, for the first time, to explore complex relationships between prisoners' literacy skills and their experiences and characteristics.

Literacy Assessment Booklets

The National Adult Literacy Survey measures literacy along three scales — prose, document, and quantitative — composed of literacy tasks that simulate the types of demands that adults encounter in everyday life. The literacy tasks administered in this survey included 81 new tasks as well as 85 tasks that were included in the previous young adult and job-seeker surveys. The administration of a common pool of tasks in each of the three surveys allows for valid comparisons of results across time for different populations.

The new literacy tasks developed for the survey serve to refine and extend the three existing literacy scales and provide a better balance of tasks across the three scales. The framework used to develop these tasks reflects research on the processes and strategies that respondents used to perform the literacy tasks administered in the young adult survey. In creating the new tasks, one goal was to include diverse stimulus materials and to create questions and directives that represent the broad range of skills and processes inherent in the three domains of literacy. Another goal was to create tasks that reflect the kinds of reading, writing, and computational demands that adults encounter in work, community, and home settings. Because the tasks are meant to simulate real-life literacy activities, they are open-ended — that is, individuals must produce a written or oral response, rather than simply choose the correct response from a list of options.

The new literacy tasks were developed with attention to the following elements:

- the structure of the stimulus material — for example, exposition, narrative, table, graph, map, or advertisement
- the content represented and/or the context from which the stimulus is drawn — for example, work, home, or community
- the nature of what the individual is asked to do with the material — that is, the purpose for using the material — which in turn guides the strategies needed to complete the task successfully

These factors, operating in various combinations, affect the difficulty of a task relative to others administered in the survey.

The printed and written materials selected for the survey reflect a variety of structures and formats. Most of the prose materials are expository — that is, they describe, define, or inform — since most of the prose that adults read is expository; however, narratives and poetry are included as well. The prose selections include an array of linguistic structures, ranging from texts that are highly organized both topically and visually, to those that are loosely organized.

Texts of varying lengths were chosen, ranging from full-page magazine selections to short newspaper articles. All prose materials included in the survey were reproduced in their original format.

The document materials represent a wide variety of structures, including tables, charts and graphs, forms, and maps. Tables include matrix documents in which information is arrayed in rows and columns (for example, bus or airplane schedules, lists, or tables of numbers). Documents categorized as charts and graphs include pie charts, bar graphs, and line graphs. Forms are documents that must be filled in, while other structures include advertisements and coupons.

Quantitative tasks require the reader to perform arithmetic operations using numbers that are embedded in print. Since there are no materials that are unique to quantitative tasks, they were based on prose materials and documents. Most quantitative tasks were, in fact, based on documents.

Adults do not read printed or written materials in a vacuum. Rather, they read within a particular context or for a particular purpose. Accordingly, the survey materials were chosen to represent a variety of contexts and contents. Six such areas were identified: home and family, health and safety, community and citizenship, consumer economics, work, and leisure and recreation. Efforts were made to include as broad a range as possible and to select universally relevant contexts and contents to ensure that the materials would be familiar to all participants. In this way, the disadvantages for individuals with limited background knowledge were minimized.

After the materials were selected, accompanying tasks were developed. The tasks were designed to simulate the way in which people use various types of materials and to require different strategies for successful performance. For both the prose and document scales, the tasks can be organized into three major categories: locating, integrating, and generating information. In the *locating* tasks, readers were asked to match information given in a question or directive with either literal or synonymous information in the text or document. *Integrating* tasks asked the reader to incorporate two or more pieces of information from different parts of the text or document. *Generating* tasks required readers not only to process information located in different parts of the material, but also to draw on their knowledge about a subject or to make broad, text-based inferences.

Quantitative tasks required readers to perform one or more arithmetic operations (addition, subtraction, multiplication, or division) either singly or in combination. The type of operation to be performed was sometimes obvious from the wording of the question; in other tasks the readers had to infer which operation was to be performed. In some cases the numbers required to perform the operation could be easily identified; in others they were embedded in text. Some quantitative tasks asked the reader to explain how he or she would solve a problem, rather than to perform the actual calculation. The use of a simple, four-function calculator was required for some tasks.

Survey Design: BIB Spiralling

No individual could be expected to respond to the entire set of 166 simulation tasks administered as part of the survey. Accordingly, the survey design gave each respondent a subset of the total pool of literacy tasks, while at the same time ensuring that each of the 166 tasks was administered to a nationally representative sample of the adult population. Literacy tasks were assigned to blocks or sections that could be completed in about 15 minutes, and these blocks were then compiled into booklets so that each block appeared in each position (first, middle, and last) and each block was paired with every other block. Thirteen blocks of simulation tasks were assembled into 26 booklets, each of which could be completed in about 45 minutes. During a personal interview, each participant was asked to complete one booklet of literacy tasks and the background questionnaire, which required approximately 20 minutes.

Training the Data Collection Staff

For the national and state samples, 24 field supervisors, 24 field editors, and 421 field interviewers were recruited and trained in January and February of 1992. The 24 supervisors were trained first at a session in Bethesda, Maryland. The seven-day program included the interviewer training. Additionally, Westat provided training specific to supervisory responsibilities, including the use of Westat's Automated Survey Control System, a computer-based system for managing the data collection effort. Finally, supervisors and editors were trained to perform an item-by-item edit for each data collection instrument received from the field interviewers.

After the training offered in Bethesda, interviewers attended training sessions geographically closest to their homes, either San Francisco (January 31-February 2) or Dallas (February 7-9). Four training groups were formed at each of the two training sites. Each group was led by a Westat home office field manager. Within each of the four groups, the trainees were divided into "learning communities" with approximately 18 interviewers each. Each community was led by the field supervisor who would supervise the interviewers during the data collection phase.

The training program was modeled closely after Westat's general approach for training field staff. This approach uses a mix of techniques to present study material, focusing heavily on trainee participation and practice. The training program was standardized with verbatim scripts and a detailed agenda to ensure comparability in presentation across groups.

The key training topics were the data collection instruments — the household screener, the background questionnaire, and the interview guide and literacy exercise booklet. The majority of training time was devoted to instructions for administering these documents. In addition, sessions were used to present instructional material on gaining respondent cooperation, keeping records of nonresponse cases, editing completed work, and completing administrative forms. A bilingual field supervisor provided Spanish speaking interviewers with training on the Spanish translations of the screener and background questionnaires.

Prior to project-specific training, new interviewers attended an additional one-half day of training on general interviewing techniques. Interviewers selected to work on the prison sample received an additional day of training on interview procedures unique to that sample.

Administering the Data Collection Instruments

Data collection instruments included the screener, which was designed to enumerate household members and select survey respondents, the background questionnaire, and the literacy exercise booklets. Interviewers were given their first assignments and began work immediately after training. The interviewer was given a call record folder and screener for each sampled dwelling unit in his or her assignment. A computer-generated label attached to the front of each folder and screener provided the case identification number, address, and assigned exercise booklet number. Additionally, interviewers were provided with all other field materials necessary to conduct interviews and meet reporting requirements.

Case assignments were made by the field supervisors, who also mailed letters to households about one week before the interviewers planned to contact the household. When making contact, the interviewer first verified that the address was in the sample and the unit was, in fact, an occupied dwelling. If the unit did not meet the definition of a year-round housing unit or was vacant, or for some other reason the interviewer was unable to complete a screener at an assigned address, she or he documented the situation in a noninterview report form.

The interviewer introduced the study using an introduction printed on the front of the screener. As part of the introduction, the interviewer indicated that if someone from the household was selected for an interview, the respondent would be paid $20 for participating. After introducing the study, the interviewer proceeded to conduct the screening interview with any household member 16 years of age or older. If the household members spoke only a language other than Spanish or English, the interviewer could obtain the services of a translator to complete the screener interview.

The screener was used to collect names, relationships, sex, age and race/ethnicity of all household members at the selected dwelling unit. For the national sample, household members aged 16 years and older were eligible for selection. For the state sample, however, household members 16 to 64 years of age were eligible. In households with three or fewer eligible household members, one was randomly selected for the interview. In households with four or more eligibles, two respondents were selected. To select respondents, interviewers first listed the names and ages (in descending age order) of all eligible household members. They then referred to a sampling table which selected one or two respondents from the household.

Once the Screener was completed and a respondent(s) selected, the interviewer proceeded to administer the background questionnaire and the exercise booklet. If the selected respondent was not available at the time the screener was conducted, the interviewer returned to administer the background questionnaire and exercise booklet, which were administered on the same visit.

The background questionnaire took approximately 20 minutes to administer and could be conducted in English or Spanish (using the Spanish printed version) only. In the introduction to the background questionnaire, the respondent was told that he or she would be given a check for $20 in appreciation of the time and effort involved in completing the interview, questionnaires, and assessment. The background questionnaire was divided into six sections and collected demographic data as well as data on literacy-related behaviors. Respondents from each of the 11 participating states were asked five state-specific questions, which appeared at the end of the questionnaire.

When the background questionnaire was completed, the interviewer administered the exercise booklet, which took approximately 45 minutes. There were 26 different versions of the exercise booklet, and each version had a corresponding interview guide, which the interviewer used to facilitate the respondent's completion of tasks in the booklet.

For the prison population, the interviewer informed the selected inmate about the study using an introduction printed in the background questionnaire since there was no screener. As part of the introduction, the interviewer indicated that the inmate would receive a certificate of participation if he or she completed the survey. Because of varying prison regulations, it was not possible to pay inmates $20 for their participation and so they received the certificate. The background questionnaire and exercise booklet were administered using the same procedures as for the household population.

Response Rates

Since there were three instruments — screener, background questionnaire, and exercise booklet — required for the administration of the survey, it was possible for a household or respondent to refuse to participate at the time of the administration of any one of these instruments. Thus, response rates were calculated for each of the three instruments. For the prison sample there were only two points at which a respondent could refuse — at the administration of either the background questionnaire or exercise booklet. The response rates presented below reflect the percentage of those who had the opportunity to participate at each stage of the survey. The response rates for the national household and prison samples are as follows.

	Response Rates	
Instrument	**National**	**Prison**
Screener	89.1%	N/A
Background Questionnaire	81.0%	85.7%
Exercise Booklet	95.8%	96.1%

Data Collection Quality Control

Several quality control procedures relating to data collection were used. These included the interviewer field edit, a complete edit of all documents by a trained field editor, validation of 10 percent of each interviewer's close-out work, and field observation of both supervisors and interviewers.

At the interviewer training session, interviewers were instructed on procedures for performing a field edit of all data collection documents. The main purpose of this edit was to catch and correct or explain any errors or omissions in recording, to learn from mistakes so they were not repeated, and to remove stray marks and completely fill in bubbles on the documents that were to be optically scanned.

Additionally, a complete edit was performed on all documents by a trained field editor. An item-by-item review was performed on each document, and each error was fully documented on an edit form. The supervisor reviewed the results of the edit with the interviewer during his or her weekly telephone conference.

Validation is the quality control procedure used to verify that an interview was conducted and it took place at the correct address and according to specified procedures, or that nonresponse statuses (e.g., refusals, vacancies, language problems) were accurately reported by the interviewers. Interviewers knew that their work would be validated but did not know to what extent or which cases. A 10 percent subsample of dwelling units were selected and flagged in the supervisor's log and in the automated survey control system (ASCS). The supervisors performed validation interviews by telephone if a phone number was available. Otherwise, validation was performed in person by the supervisor or by another interviewer.

Field observations of both supervisors and interviewers were performed by Westat field management staff. One purpose of the interviewer observation was to provide home office staff with an opportunity to observe effectively both performance of field procedures and respondents' reactions to the survey. Another purpose was to provide feedback to weak interviewers when there was concern about their skills and/or performance. In addition to in-person observations, interviewers were required to tape record one complete interview and assessment. The field supervisor selected the particular case in advance and listened to the tape to "observe" each interviewer.

Finally, nine of the 24 supervisors were visited by field management staff and evaluated on their editing, coding, office organization, ability to maintain up-to-date records on production data, and supervision of interviewers.

Scoring the Literacy Exercise Booklets

As the first shipments of exercise booklets were received at ETS, copies were made of actual responses to the tasks. These sample responses were then scored by various staff, including the test developer and scoring supervisor, using either the scoring guides developed for the young adult tasks or guides prepared during the development of the new tasks. As the sample responses were scored, adjustments were made to the scoring guides for the new tasks to reflect the kinds of answers that the respondents were providing.

The sample papers comprised the training sets used to train a group of readers who would score the exercise booklets. The purposes of the training were to familiarize the readers with the scoring guides and to ensure a high level of agreement among the readers. Each task and its scoring guide were explained and sample responses representative of the score points in the guide were discussed. The readers then scored and discussed an additional 10 to 30 responses. After group training had been completed, all the readers scored all the tasks in over a hundred booklets to give them practice in scoring actual booklets, as well as an opportunity to score more responses on a practice basis. A follow-up session was then held to discuss responses on which readers disagreed. The entire training process was completed in about four weeks.

Twenty percent of all the exercise booklets were subjected to a reader reliability check, which entailed a scoring by a second reader. To prevent the second reader from being influenced by the first reader's scores, the first reader masked the scores in every fifth booklet that he or she scored. These booklets were then passed on for a second reader to score. When the second reader had scored every item, the first reader's scores were unmasked. If there was a discrepancy between the two scores for any response, the scoring supervisor reviewed the response and discussed it with the readers involved.

The statistic used to report inter-reader reliability is the percentage of exact agreement — that is, the percentage of times the two readers agreed exactly in their scores. There was a high degree of reader reliability across all the tasks in the survey, ranging from a low of 88.1 percent to a high of 99.9 percent with an average agreement of 97 percent. For 133 out of 166 open-ended tasks, the agreement was above 95 percent.

Data Entry

The background questionnaire was designed to be read by a computerized scanning device. For most questions, field personnel filled in ovals next to the respondent's answers. Open-ended items in the background questionnaire were coded and the ovals filled in by ETS staff before they were shipped to the scanning department. Responses on the screener were transferred to scannable documents by ETS personnel when the check-in process was complete, and the screener documents were batched and sent to the scanning department on a regular basis. Exercise booklet scores were transferred to scannable documents by the readers who scored the items, and these were also batched and sent to the scanning department at regular intervals. The scanned data from screeners, background questionnaires, and exercise booklets were transmitted to magnetic tape, which was then sent to the ETS computer center. As each of the different instruments were processed, the data were transferred to a database on the main computer for editing.

Editing and Quality Control

Editing included an assessment of the internal logic and consistency of the data received. For example, data were examined for nonexistent housing locations or booklets, illogical or inconsistent responses, and multiple responses. Where indicated, an error listing was generated and sent back to the processing area, where the original document was retrieved and the discrepancies were corrected. If resolution of a conflict in the data was not possible, the information was left in the form in which it was received. Wherever possible, however, conflicts were resolved. For example, in the infrequent cases in which field personnel provided more than one response to a single-response noncognitive item, specific guidelines were developed to incorporate these responses consistently and accurately. The background questionnaires were also checked to make sure that the skip patterns had been followed and all data errors were resolved. In addition, a random set of booklets was selected to provide an additional check on the accuracy of transferring information from booklets and answer sheets to the database.

Scaling

The results from the National Adult Literacy Survey are reported on three scales established by the NAEP 1985 Young Adult Literacy Survey: prose literacy, document literacy, and quantitative literacy. With scaling methods, the performance of a sample of examinees can be summarized on a series of subscales even when different respondents have been administered different items. Conventional scoring methods are not suited for assessments like the national survey. Statistics based on the number of correct responses, such as proportion of correct responses, are inappropriate for examinees who receive different sets of items. Moreover, item-by-item reporting ignores similarities of subgroup comparisons that are common across items. Finally, using average percent correct to estimate means of proficiencies of examinees within subpopulations does not provide any other information about the distribution of skills among the examinees.

The limitations of conventional scoring methods can be overcome by the use of item response theory (IRT) scaling. When several items require similar skills, the response patterns should have some uniformity. Such uniformity can be used to characterize both examinees and items in terms of a common scale attached to the skills, even when all examinees do not take identical sets of items. Comparisons of items and examinees can then be made in reference to a scale, rather than to percent correct. IRT scaling also allows distributions of groups of examinees to be compared.

Scaling was carried out separately for each of the three domains of literacy (prose, document, and quantitative). The NAEP reading scale, used in the young adult survey, was dropped because of its lack of relevance to the current NAEP reading scale. The scaling model used for the national survey is the three-parameter logistic (3PL) model from item response theory.[2] It is a mathematical model for estimating the probability that a particular person will respond correctly to a particular item from a single domain of items. This probability is given as a function of a parameter characterizing the proficiency of that person, and three parameters characterizing the properties of that item.

Overview of Linking the National Adult Literacy Survey (NALS) Scales to the Young Adult Literacy Survey (YALS) Scales

Prose, document, and quantitative literacy results for the National Adult Literacy Survey are reported on scales that were established in the Young Adult Literacy Survey. For each scale, a number of new items unique to the national survey were added to the item pool that was administered in the original young adult survey. The NALS scales are linked to the YALS scales based upon the commonality of the two assessments, namely, the original young adult survey common items. Fifty-one percent of the items administered in the national survey were common to young adult survey. The composition of the item pool is presented in table C.1.

NALS Table C.1

Composition of the Item Pool for the National Adult Literacy Survey

	Number of Items		
SCALE	YALS items	New items	NALS total
Prose	14	27	41
Document	56	25	81
Quantitative	15	28	43
Total	85	81	165

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

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[2] A. Birnbaum. (1968). "Some Latent Trait Models." In F.M. Lord and M.R. Novick, *Statistical Theories of Mental Test Scores*. Reading, MA: Addison-Wesley. F.M. Lord. (1980). *Applications of Item Response Theory to Practical Testing Problems*. Hillsdale, NJ: Erlbaum.

A unidimensional IRT model like the three-parameter logistic model employed in this study assumes that performance on all the items in a domain can, for the most part, be accounted for by a single (unobservable) proficiency variable. Subsequent IRT linking and scaling analyses treat each scale separately, that is, a unique proficiency is assumed for each scale. As a result, the linking of corresponding scales was carried out for each pair of scales separately. The three steps used to link the scales are listed below.

1. Establish provisional IRT scales through common item parameter calibration based on a pooling of the NALS and YALS items.
2. Estimate distribution of proficiencies on the provisional IRT scales using "plausible value" methodology.
3. Align the NALS scale to the YALS scale by a linear transformation based upon the commonality of proficiency distribution of the YALS sample.

Statistical Procedures

The statistical comparisons in this report were based on the t statistic. Generally, whether or not a difference is considered significant is determined by calculating a t value for the difference between a pair of means, or proportions, and comparing this value to published tables of values at certain critical levels, called *alpha levels*. The alpha level is an a priori statement of the probability of inferring that a difference exists when, in fact, it does not.

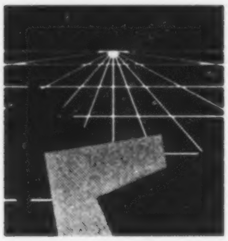
In order to make proper inferences and interpretations from the statistics, several points must be kept in mind. First, comparisons resulting in large t statistics may appear to merit special note. This is not always the case, because the size of the t statistic depends not only on the observed differences in means or the percentage being compared, but also on the standard error of the difference. Thus, a small difference between two groups with a much smaller standard error could result in a large t statistic, but this small difference is not necessarily noteworthy. Second, when multiple statistical comparisons are made on the same data, it becomes increasingly likely that an indication of a population difference is erroneous. Even when there is no difference in the population, at an alpha level of .05, there is still a 5 percent chance of concluding that an observed t value representing one comparison in the sample is large enough to be statistically significant. As the number of comparisons increases, the risk of making such an error in inference also increases.

To guard against errors of inference based upon multiple comparisons, the Bonferroni procedure to correct significance tests for multiple contrasts was used. This method corrects the significance (or alpha) level for the total number of contrasts made with a particular classification variable. For each classification variable, there are (K•(K−1))/2) possible contrasts (or nonredundant pairwise comparisons), where K is the number of categories. The Bonferroni procedure divides the alpha level for a single t test (for example, .05) by the number of possible pairwise comparisons in order to give a new alpha that is corrected for the fact that multiple contrasts are being made.

The formula used to compute the t statistic is as follows:

$$t = \frac{P_1 - P_2}{\sqrt{se_1^2 + se_2^2}}$$

where P_1 and P_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors.



APPENDIX D

Definitions of All Subpopulations and Variables Reported

(In Order of Appearance)

Prison Population

The prison sample includes only those individuals who were in state or federal prisons at the time of the survey. Those held in local jails, community-based facilities, or other types of institutions were not surveyed.

Household Population

The household population includes adults aged 16 and older who participated in the national household survey and the state surveys.

Highest Level of Education Completed

Respondents were asked to indicate the highest level of education they completed in this country. The following options were given:

Still in high school (not applicable to the prison population)
Less than high school
Some high school
GED or high school equivalency
High school graduate
Vocational, trade, or business school after high school
College, less than 2 years
College, associate's degree (A.A.)
College, 2 or more years, no degree
College graduate (B.S. or B.A.)
Postgraduate, no degree
Postgraduate degree (M.S., M.A., Ph.D., M.D., etc.)

In most tables, less than high school and some high school were collapsed into one group (0 to 12 years); GED recipients and high school graduates were collapsed into another group; and vocational, college, and postgraduate categories were collapsed into a postsecondary group.

In other tables, less than high school (0 to 8 years), some high school (9 to 12 years), GED, and high school diploma were presented as separate groups, with the postsecondary group collapsed as described above.

A third education variable was derived by collapsing less than high school and some high school into one category and all other categories into a high school diploma, GED, or higher group.

Finally, a fourth grouping categorizes education level as less than high school (0 to 8 years), some high school (9 to 12 years), GED, high school diploma, and two postsecondary groups — those who had not received a degree (some postsecondary) and those who had (postsecondary degree).

Average Years of Schooling

Responses to the question on the highest level of education completed were used to calculate the average number of years of schooling completed. For the household population, individuals who were still in high school were left out of this analysis. Adults who had not graduated from high school were asked to indicate exactly how many years of schooling they had completed (0 through 11). Individuals who did not provide this information were assigned a value equal to the average number of years of schooling completed by those who did provide this information. For adults in the category of 0 to 8 years of education, the average number of years of schooling was 6.10. For adults in the category of 9 to 12 years of education, the average number of years of schooling was 10.11. The remaining adults were assigned values representing the number of years of schooling completed, as follows:

GED, high school equivalency	12
High school graduate	12
Vocational, trade, or business school	13
College, less than 2 years	13
College, associate's degree (A.A.)	14
College, 2 or more years, no degree	14.5
College graduate (B.S. or B.A.)	16
Postgraduate, no degree	17
Postgraduate degree	18

Using these values, the average number of years of schooling was calculated for race/ethnicity.

Race/Ethnicity

Respondents were asked two questions about their race and ethnicity. One question asked them to indicate which of the following terms best described them. The interviewer recorded from observation the races of respondents who refused to answer the question.

White
Black (African American)
American Indian
Alaskan Native
Pacific Islander
Asian
Other

The other question asked respondents to indicate whether they were of Spanish or Hispanic origin or descent. Those who responded "yes" were asked to identify which of the following groups best describes their Hispanic origin:

Mexicano, Mexican, Mexican American, Chicano
Puerto Rican
Cuban
Central/South American
Other Spanish/Hispanic

All those who indicated they were of Spanish or Hispanic origin were grouped together, regardless of their origin. Adults of Pacific Islander origin were grouped with those of Asian origin, and Alaskan Natives were grouped with American Indians. All other racial/ethnic groups are reported separately. In most analyses, however, results are reported only for the White, Black, and Hispanic subpopulations because the sample sizes of the other groups were too small to provide reliable estimates.

A second race/ethnicity variable was derived by combining the Hispanic group with all others.

Sex

The interviewers recorded the sex of each respondent.

Age

Respondents were asked to report their date of birth, and this information was used to calculate their age. In most analyses, ages were then grouped as follows: 16 to 24, 25 to 34, and 35 and older. Another grouping presents age as follows: 16 to 18, 19 to 24, 25 to 34, 35 to 54, 55 to 64, 64 and older.

Presence and Type of Physical, Mental, or Other Health Condition

Respondents were asked a series of questions in which they were asked to identify whether they had any of the following:

a physical, mental, or other health condition that keeps them from participating fully in work, school, or other activities
difficulty seeing the words or letters in ordinary newspaper print even when wearing glasses or contact lenses, if they usually wear them

difficulty hearing what is said in a normal conversation with another
  person even when using a hearing aid, if they usually wear one
a learning disability
any mental or emotional condition
mental retardation
a speech disability
a physical disability
a long-term illness (6 months or more)
any other health impairment

Respondents were able to indicate each physical, mental, or health condition they had; thus, these categories are not mutually exclusive. From this series of questions one variable was defined as one or more disabilities and no disability. Data are also reported by each of the specific disabilities.

Reason for Dropping Out of School

Respondents who reported that they had less than high school, some high school, or a GED were asked to indicate the main reason for dropping out of school. They were asked to choose from the following reasons:

financial problems
went to work or into the military
pregnancy
lost interest or behavior problems in school
academic problems in school
family or personal problems
convicted of crime or sent to jail/prison/detention center
other

The categories of lost interest and academic problems were grouped together and the category of pregnancy was grouped with other because of small sample sizes.

Level of Parental Education

Respondents were asked to indicate the highest level of education completed by their mother (or stepmother or female guardian) and by their father (or stepfather or male guardian). The analyses in this report are based on the highest level of education attained by either parent.

Language Spoken in the Home While Growing Up

Respondents were asked what language or languages were spoken in their home while growing up. Three categories were then derived: English only, English and any other language, and any language or languages other than English.

Occupation

Inmates who indicated that they had worked within the last three years while not incarcerated were asked two questions about their occupation. The first question asked them to indicate their occupation or the name of their job — for example, electrical engineer, stock clerk, typist, or farmer. The second question asked them to describe the most important activities or duties of the job. Responses were coded according to the Bureau of Census occupation codes. These codes were then collapsed into four main categories: professional, sales or administrative, craft or service, and assembly, labor, farm, or transportation.

Monthly Income

Inmates who indicated they had worked within the last three years were also asked to indicate their average monthly earnings before deductions. Responses were grouped into four categories: 0 to $499, $500 to $999, $1,000 to $1,499, and $1,500 or more.

Current Offense

Inmates were asked for what offenses they were currently in prison. If they indicated more than one, they were asked to indicate for which offense they had received the longest sentence. That offense was the one used to group inmates by offense if they indicated more than one. The reporting categories are comprised as follows:

violent: homicide, rape, sexual assault, robbery, kidnapping, or assault
property: burglary, larceny, auto theft, fraud, embezzlement, forgery, arson, stolen property, trespassing, hit and run, and other property
drugs: trafficking, possession or use, and other drug related
public order and other: weapons offense, rioting, contempt of court, morals/decency offense, probation and parole violations, minor traffic violations

Federal offenses were not included.

Length of Sentence

This variable was derived from questions that asked for date of admission to prison and date of expected release. The categories are as follows: 1 to 60 months, 61 to 120 months, 121 or more months, do not expect to be released, and don't know.

Participation in Education and Vocational Training Programs

Inmates were asked two questions about their participation in education and vocational training programs. Four categories were derived: no participation in either, participation in education classes only, in vocational classes only, and in both kinds of classes.

Involvement in Prison Work Assignments

Inmates indicated whether or not they currently had any work assignments whether inside or outside of prison.

Type of Work Assignment

Inmates who indicated that they had a work assignment were asked to indicate what assignments they had. The options included the following:

goods production
general janitorial duties
ground or road maintenance
food preparation or related duties
laundry
hospital, infirmary, or other medical services
farming, forestry, or ranching
other services, e.g., library, stockroom, store
maintenance, repair, or construction
enrolled in school
other

Laundry, hospital, and farming were collapsed into the other group because their sample sizes were too small to provide reliable estimates.

Participation in Groups

Inmates indicated whether or not they had ever joined any organization authorized by prison authorities.

Type of Groups Joined

Inmates who indicated that they had joined a group were asked to indicate what groups they had joined. The options from which they had to choose were grouped as follows:

addiction: drug awareness or dependency and alcohol-related groups
religious: religious study group and religious activities
life skills: other prisoner self-help or personal improvement group, classes in parenting, classes in life skills, and arts and crafts

ethnic or racial organization
prisoner assistance group
outside community activities
prerelease programs
other

Number of Groups Joined

Because the question regarding what groups were joined allowed multiple responses, a variable was derived based on the number of different groups the inmates indicated in response to that question.

Recidivism

Recidivism was defined as a prior sentence to probation and/or incarceration. The data were derived from two series of questions. One series asked inmates if they had been on probation and if so, how many times as a juvenile and as an adult. Another series asked if they had ever served time in prison and if so, how many times as a juvenile and as an adult. Data are reported by two different sets of variables. The first set presents data by the variables of probation (regardless of whether or not they had been incarcerated), incarceration (regardless of whether or not they had been on probation), and probation and/or incarceration. These variables were further broken down by the categories of none (for example, no probation), juvenile only, adult only, and both juvenile and adult. The second set of variables presents data by probation only, incarceration only, and both probation and incarceration.

Number of Prior Sentences

The variable of number of prior sentences was derived from the same series of questions that was used to define prior sentence. The number of prior sentences was defined for probation, incarceration, and probation and/or incarceration and included the categories of none, one time, two times, and three or more times.

Reading, Writing, and Arithmetic Practices

Inmates were asked a series of questions about how often they read the following materials in English:

letters or memos
reports, articles, magazines, or journals
manuals or reference books, including catalogs or parts lists
directions or instructions for medicines, recipes, or other products
diagrams or schematics
bills, invoices, spreadsheets, or budget tables

They were asked another series of questions about how often they wrote or filled out letters or memos, forms, and reports and articles, and one question about how often they used arithmetic. The frequency categories for all these questions were every day, a few times a week, once a week, less than once a week, and never. These categories were collapsed into three: every day or a few times a week, once a week, and less than once a week including never.

The household population was asked the same series of questions except that they were asked to report how often they read, wrote, or used the materials for their personal use and on the job. The data for personal and job use were collapsed so as to report overall frequency for each of the materials listed.

Types of Books Read

Respondents were asked to indicate which of the following types of books they had read in English in the past six months:

fiction
recreation or entertainment
current affairs or history
inspiration or religion
science or social science
reference, such as encyclopedias or dictionaries
manuals for cooking, operating, repairing, or building
any other types of books

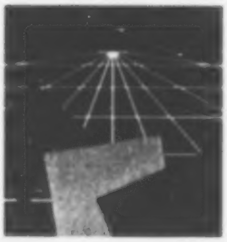
Respondents were able to indicate each type of book they had read; thus, these categories are not mutually exclusive.

Self-Perceptions of Ability to Perform Literacy Activities

Respondents were asked how well they read and write English and how well they do arithmetic problems when getting the numbers from materials written in English. Four response options were given: very well, well, not well, and not at all.

Collaboration

Respondents were asked how much help they get from family members or friends with various types of everyday literacy tasks. Four response options were given: a lot, some, a little, and none.



APPENDIX E

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